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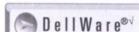
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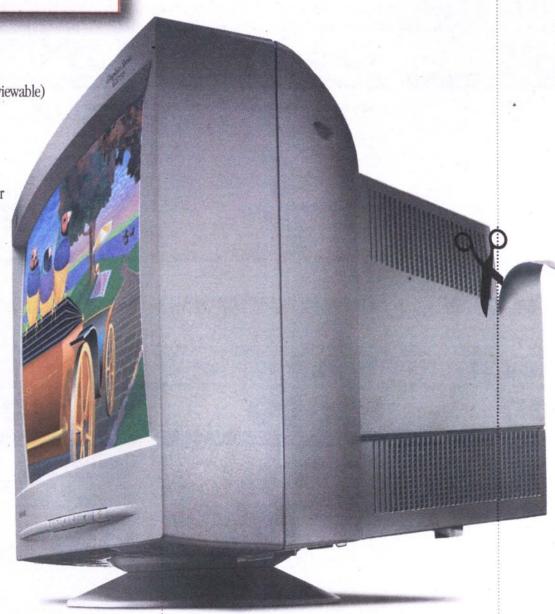
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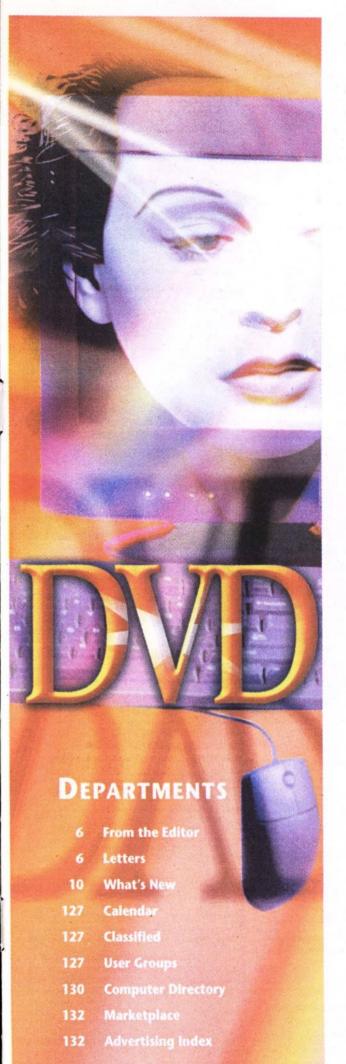
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FROM THE EDITOR



The gospel according to B.B.

Whew. that's Comdex PacRim for another year. This event is special to us for a couple of reasons. Being held in January, it's the first Canadian trade show we attend, and we look forward to it as

an energizer for the year to come.

Also, given the fact that The Computer Paper was founded on the West Coast a decade ago, the show is something of a reunion too. This year was no exception. To the thousands of people who stopped by our booth during the threeday show, thanks for the smiles and the words of encouragement. Events like this give us an opportunity to actually connect face-to-face with our supporters, as well as our critics.

The idea of staying in tune with your audience is basic good sense, whether you're producing a magazine, a presentation for the boss or a pizza for your customer. I was reminded of that during the week of PacRim by a quite unrelated event. After a full day and evening at the show, I went home, flopped on the couch and turned on the TV.

Pamela Wallin Live was on, and her guest was blues legend, B.B. King. Wallin was asking him how, at 72 years old, he managed to stay at the top of his profession. He said it was because he's always considered his listeners as his bosses, and that's who he works to please. He also said he prepares for each concert gig as though he were auditioning for the first time. He stays fresh because he thinks fresh. That's why B.B. is still the King.

In the computer industry, staying fresh isn't just desirable, it's a survival tactic. If you've attended a trade show in the past year, you've probably spotted both the energy pockets and the energy vacuums. And it has little to do with the size of the company. We've all seen large and small booths that draw the crowds, just as we've seen large and small ones that don't. The common denominator seems to be enthusiasm for and the confidence in their products.

It's alive

At this year's show, one of the more intriguing product lines wasn't even available for public view, but rather, it was tucked away in a private hotel suite. Fujitsu Interactive out of San Francisco was one of several companies being highlighted by a manufacturer's rep company. Fujitsu Interactive has taken the idea of a virtual pet to new heights with a series of interactive programs whose characters are A.L.I.V.E., which stands for Autonomous Living Interactive Virtual Entity.

The first product, called Fin Fin the Real Computer Creature, is based on a creature that looks like a dolphin with wings and bird-like feet. Fin Fin lives in your computer on an imaginary world called Teo. The idea is to tame and then interact with Fin Fin. It responds, and develops its own personality according to the input you provide. One of our reviewers is now trying to tame the creature, and will have a review of the product in a future issue.

The first Fin Fin title was introduced last year and won a couple of international awards. Since then Fujitsu Interactive has three other products in the Fin Fin series. It has also introduced a similarly conceived title called Digital Doggie Duo, in which a computer user can raise and train a virtual canine. The "duo" refers to the Tamogotchi-like device that's included in the package—just in case you never want to leave home without Fluffy.

Despite the arguably frivolous nature of these programs, they represent early examples of the computer adapting to human inputs. Microsoft's Interactive Barney computer interface is another example. If you cover the stuffed Barney's "eyes," then Barney, the computer program responds appropriately.

We're amused, but we're not fooled by this stage of technology. We know there's just some clever programming in there and not any kind of real intelligence. But whether that's true or not is irrelevant to the effects that this kind of technology is bound to have on us. Consider the computerized psychotherapist program called Eliza. It's been around for years, but seems to resurface regularly.

The basic workings of Eliza consist of a set of non-directive, general comments that the computer returns to the statements a user types in. User: I'm not feeling so hot these days, Doc.

Eliza: Can you expand on that?

User: Well, my job sucks, I had a fight with my boss and my application to university got reject-

Eliza: Is that all?

User: Isn't that enough?

Eliza: It might be a good idea to look more closely at the problems.

User: You mean like my job?

Eliza: Is that what you'd like to talk about?

The above is just a hypothetical dialog, but the idea is that the program doesn't give specific advice. Instead, like some types of therapy, it creates a dialog that leads the user to solve his or her own problem. Eliza works without any real understanding of the patient's problem, or any high-order intelligence or insights into the human psyche.

At the other end of the scale, context-sensitive help programs are getting quite good at helping a user, but with specifically defined problems. As you may have discovered, contextsensitive help is lousy at solving a problem that hasn't been anticipated by the person that programmed the help system.

But already, children's educational programs have the capacity to branch depending on the child's responses and present extra lessons to cover topics that he or she is getting wrong. If you take that kind of branching along with the specificity of information in help files and some Eliza-like programming, tie it to a Fin Fin-like entity, and add a user-recognition interface, you might see the beginnings of a computer that adjusts to you.

It would "notice" when you were frowning and pounding the keys a lot harder than you normally do, and perhaps launch your favorite Dilbert cartoon as a screen saver. Or it would "notice" when you seemed particularly on the ball, and suggest that now might be a good time to tackle that assignment you postponed three times already. Or it would-oops, gotta go, my computer says I've blabbed enough.

Enjoy the issue David Tanaka, editor

LETTERS

Winner says thanks

As the winner of your July 1997 Reader's Survey Contest I would like to take this opportunity to thank The Computer Paper for a wonderful week of sun and sand in Puerto Vallarta, Mexico. Continued success to your great publication.

Additional thanks to Roy McCullough and his crew at Uniglobe Travel and Signature Vacations for putting it all together.

Al and Doreen Christensen

Another PIM

I enjoyed your review of PIMs (The Computer Paper January, 1998), and I note that you did take the trouble to review some of the better shareware offerings in that department.

But I was disappointed to see that you missed my favorite PIM-Time & Chaos, from iSBiSTER International, Inc., in Texas. In my view, Time & Chaos is as good as any you reviewed, but is rather less expensive at US\$29.95. (That was the price I paid for version 4; the program is now in version 5.x, and the price may have gone up.)

The program is also well supported by its

publishers, which is more than I can say for several of the publishers of the PIMs you did review.

If you want more info, you could check iSBiSTER out at: http://www.isbister.com/.

Rob Mayhew, Vancouver

EIDE caution

Here's a warning to all using EIDE hard drives, I recently read about a problem with over half of the EIDE hard drives out there. I don't remember the specifics but I think the problem is that data on your hard drive gets corrupt gradually due to incompatibility with Win95 which was recently discovered. I thought it was a hoax, but when I checked Microsoft Web site, There was [a] mention of this and there was a patch for it at: http://www.microsoft.com/windows95/info/dskts.htm

Do download their patch and use it to save yourself from grief. The file is only 114KB, worth the trouble.

Ron Xu

DT Adds: Yes, thanks for the tip. The Microsoft Web page referenced above gives the specific conditions under which these errors can occur. This is worth

checking out if you have an EIDE drive larger than 504 MB, which is partitioned into multiple logical drives and with a system bios that supports extended INT13 functions.

Zip tip

The February 98 issue of TCP had a letter from Gary Dale discussing the relative merits of Iomega's Zip drive and Syquest's Ez-Flyer. There is a way to use the Zip as a boot drive. Blue Sky Innovations (http://www.blueskyinnovations.com) offers a variety of solutions (including an add-in BIOS update hardware card) to allow the use of the Zip drive as a boot (A:) drive. This will also function without the add-in BIOS. Versions exist for the parallel port and IDE/ATAPI versions (I found nothing for a SCSI drive). The price for the software-only varieties are US\$15. Time-limited trial versions are available. I don't have a great need for this; however, I did test it and it works.

P.S. I have no interest or connection with Blue Sky.

Dunc Petrie

Continued on page 8

רסהיטדבת אביבת

Volume 11, No. 3, March 1998

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Continued from page 6

Unix commands debate continues

In the February 1998 issue you carried an exchange between Kaz Kylheku and Keith-Schengili-Roberts about confusion in the Weaving [Your Own Web Site] series. It was about Unix commands and FTP commands, in which KS-R seems to imply that the only use of Unix for a Webmaster is as a server for FTP (as

well as HTTP of course). This is a common misconception, and means that many Webmasters miss out on some of the most convenient and simple site management tools, which are parts of standard Unix.

For example, one can (and should) scan the error log regularly to see if there is a problem with incorrect links, and these are easily corrected. If one [has] several Webmasters on a site, say if I had an account on your server and had a

home page there, I could set up a one-line shell script to search for the string "silvert" in the error log, and I would get a listing of all errors under my home page, of the form [Thu Jan 1 09:57:10 1998] access to /server/htdocs/~silvert/newyears.hmtl failed for xxx.ca, reason: File does not exist and I would see that I had a reference to a file with the extension "hmtl" instead of "html". I could then use the command grep hmtl *.html to find any HTML file in which the string "hmtl" appeared. This and similar strategies provide an easy way to check one's Web site for errors and to fix them.

I hope that once KS-R gets the difference between Unix and FTP straightened out, he will devote a column to the critical task of maintaining and debugging a Web site.

Bill Silvert, Dartmouth, NS

K S-R replies: You are quite right-grep is another good tool that can be used by Webmasters who have a passing familiarity with Unix. The two articles are not comprehensive when it comes to covering off Unix commands that can be used by Webmasterswhole books have been written about the subject. I just tried to cover the ones I typically use everyday, and that I figured many people who might work on their own personal Web site might use.

You make a good point about some other commands that can be used—I am looking at doing a piece in the near future about Web site maintenance. and both the grep and error log instances you mention are worthy of inclusion. (I'd also mention other, primarily non-Unix tools used to track such things as hits, broken links, spelling errors, etc.).

You make a good point-thanks for the comment!

What is OEM?

Hi! I am currently looking for a video card, but in advertisements that I saw in the TCP, some vendors use the term OEM, while some others use "retail." Can you please tell the difference, if any on this?

Juivette Lok

DT replies: OEM means original equipment manufacturer. In your example, a video card manufacturer will ship an OEM video card to a PC manufacturer, who will include it as part of a complete PC system. OEM products are generally not intended to be purchased by end-user customers like you and me.

OEM products are different from "retail" or "shrinkwrap" products in a few ways that may or may not be relevant to you. The hardware part could very well be the same, but the retail product will have additional material (drivers and installation diskettes, warranty card, registration serial number, phone support, printed manual, and packaging) that makes it easier to display and sell from a store shelf. The OEM product might include all of that as well, except for the fancy box. The catch is that because the product isn't really intended to be purchased by consumers, you should make sure the manufacturer is willing to provide support directly to you as an end-consumer. You would also need to make sure you get all the stuff you need to use the product.

Suppliers generally (or at least publicly) frown on the practice of their business customers (i.e. the PC makers) selling OEM products directly to consumers. This is seen as direct and unfair competition to stores that carry their retail products. However, in this era of "factory direct to you" sales techniques, and the fact that driver updates, software patches, product support and even software manuals are available over the Web, the division between OEM and retail is not as clean as it used to be.

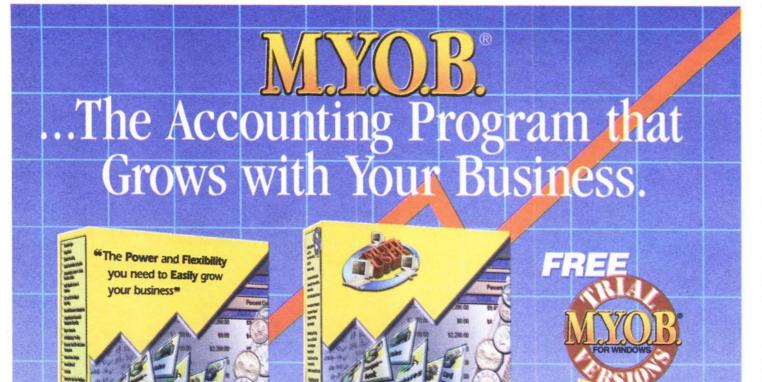
PCS clarification valued

Thank you, thank you, thank you for Ross MacDonald's excellent article on PCS phone service (see "PCS: the poop, the catch and the arguments" in the Feb '98 issue).

Last month I was almost ready to upgrade my old cel phone to a new PCS unit. After two days of phone and Web research with Bell, Cantel, and Clearnet I felt that I had been given only half (or less!) of the information I needed. and was sure that I had been fed at least a couple of near lies.

Your article covered all of the questions that I was unable to get answers to. Thanks a lot.

Barry Rueger



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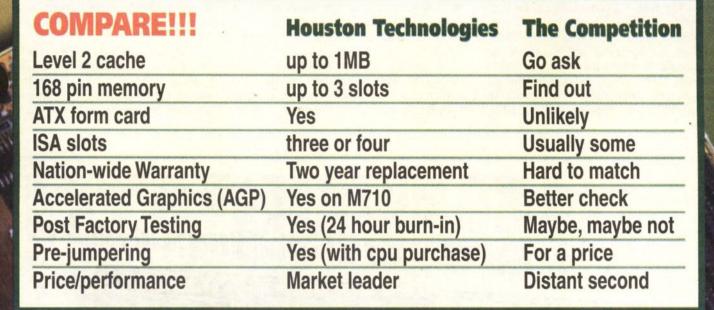
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Netscape browser and source code goes for free . In an attempt to retain its market share Netscape Communications, took a bold step by making its Netscape Navigator and Communicator Standard Edition 4.0 software products free for all users. This is a direct response to Microsoft chairman Bill Gates' pledge a year ago to make its browser, Internet Explorer, free to all takers.

This act is designed to remove any barrier of Netscape's browser and communications products from being adopted by individuals at home, school or at work as their preferred interface to the Internet.

While this plan will undoubtedly benefit the average Web surfer, the more stunning announcement to industry watchers was Netscape's plan to make the source code for

the next generation of its highly popular Netscape Communicator client software expected by the end of the first quarter of 1998-available for free.

The strategy behind this is to grab greater "mind share" in the programming community, trying to freely harness the creative energies of the thousands of programmers who can now create enhancements and custom

versions of Netscape's programs that are tightly integrated with the browser. This would further accelerate the development and distribution of future versions of Netscape Communicator to business customers and individuals, thereby further seeding the market for Netscape's enterprise solutions and Netcenter business.

Jim Barksdale, Netscape's president and chief executive officer, said that "by giving away the source code for future versions, we can ignite the creative energies of the entire Net community and fuel unprecedented levels of innovation in the browser

Separately, Netscape announced a net loss of US\$115.5 million on revenue of \$533.9 million for the year ending Dec. 31, 1997. The company said a poor fourth-quarter dragged down performance for the year. The company reported a fourth-quarter operating loss of \$20.8 million (or a total loss for the quarter, including charges of \$88.3 million).—KS-R

Contact: Netscape, Tel: 650-937-2555 http://home.netscape.com/

HP's all-in-one OfficeJet 635 does color

· For the home and small office market, Hewlett-Packard Canada has introduced a multifunction device that serves as a color printer, fax machine, scanner and copier.

The OfficeJet 635 will print black text at 5 ppm, color at 2 ppm. It will scan at up to 1,200 dpi and supports both 24-bit color and 256-level greyscale scanning. The fax feature includes speed dialing, onboard memory that will hold up to 65 pages, and a 14.4Kbps fax-

The suggested retail price for the OfficeJet 635 is \$699, which includes Corel PrintHouse 2.0 and Caere OmniPage LE software.—DT

Contact: HP Canada, Tel: 800-387-3867

Fujitsu launches 6.48 GB UltraDMA dri-

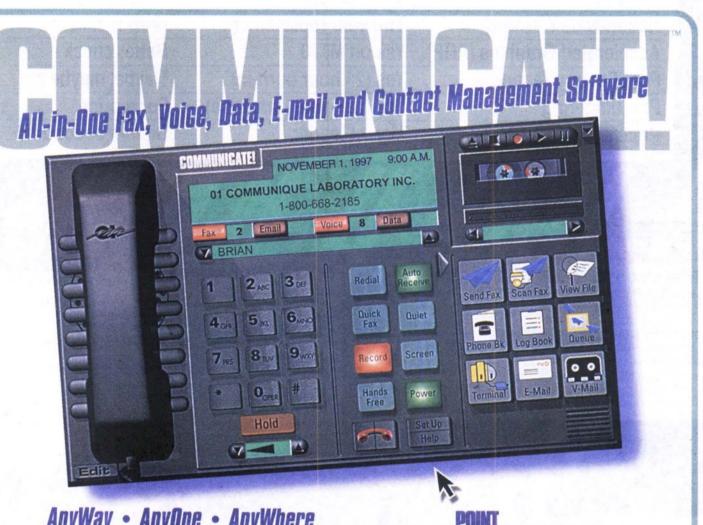
ves • Fujitsu, one of the principal suppliers of hard drives to the Canadian PC industry, has announced a new generation of high-speed, high-capacity ATA-3/UltraDMA (ultra direct memory access) 6.48 GB hard drives.

The new MPB30xx drives, with an initial suggested retail price of \$560, are intended to offer affordable mass storage for PC users with



graphics, multimedia or Internet applications. The ATA-3 Ultra DMA technology supports data transfer rates as high as 33 MB/second, a near doubling of previous drive rates. Seek time is 10 ms. The MPB30xx drives incorporate S.M.A.R.T. (self-monitoring analysis and reporting technology) systems to warn users of drive problems and allow for timely backup of files.—JE

Contact: Fujitsu Canada, Tel: 800-263-8716. or 905-602-5454. http://www.fujitsu.ca



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Contaminated sites infobase available on CD-ROM • Vancouver-based Information Retrievers has developed a contaminated sites resource for companies in the business of site reclamation or environmental impact assess-

The Contaminated Sites CD-ROM, developed under contract to the B.C. Environment Ministry, contains B.C. legislation, policies, procedures, and forms, along with government contact information and a list of frequently asked questions. An interactive groundwater model, which requires MS Excel, is also included.

The CD is available on a subscription basis, and is updated quarterly. Cost begins at \$345.

Contact: Information Retrievers, 800-667-1297, or 604-731-0783 http://www.irlvan.com

Hemera optimizes graphics for Web • Hemera Technologies Inc. of Hull, Que., started shipping NetGraphics Studio, a two-part application that optimizes images for use on the Internet.

The first part of the package, NetGraphics Optimizer, is a tool that takes images in a



number of formats and optimizes them for use on a Web page. One of its features is a vectorto-bitmap converter, that allows a user to drag a vector art image into Optimizer and translate it to GIF or JPEG format. The company says users can even copy spreadsheet cells to the Windows Clipboard, paste them into Optimizer and create GIFs for "quick and dirty" data tables for a Web page.

The utility allows images to have a transparent background. Or, the artist can adjust the compression and color depth of an image to get the best balance between the file size and image quality. Optimizer also creates interlaced images, includes a nifty download time calculator for modems of various speeds, a preview feature, and an anti-liaising feature to get rid of jaggies on bitmap images.

The second part of the package is an image organizer called NetGraphics Gallery, which allows users to search by name, category, or other criteria. Gallery is also the front end to the company's clip art collection included with the package. The collection of 2,000 royalty-free photographic images, PhotoCrafts, have been optimized for Web use. NetGallery's images are stored in a proprietary HPI format. The company claims it retains transparent

and semi-transparent image characteristics.

NetGraphics Studio 1.0 has a suggested retail price of \$99.99.

Contact: Hemera Technologies, Tel: 819-772-8200 http://www.hemera.com

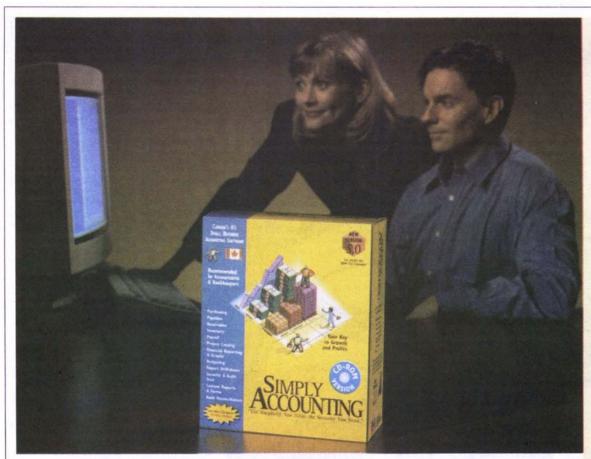
Apple spins off Claris, cuts 300 jobs • CUPERTINO, Calif. (NB)-Apple Computer,

Inc. will lay off 300 workers as it spins off its Claris subsidiary and takes software sales inhouse. Claris now becomes a company called Filemaker Inc., and is left with the Filemaker Pro line of database products.

The move is part of a restructuring of Apple designed to cut costs. Apple will assume all sales of its Mac OS 8.0 and 8.1 operating systems, and will support and continue to

develop ClarisWorks, its integrated word processing package. A press release contained no further comments from Apple at deadline, nor was there a statement from Apple's acting chief, Steve Jobs.

Avery Dennison comes home • Seeing new opportunities in all those inkjet printers and creative graphics packages going



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into home environments, Avery Dennison (the office labels company) has launched two lines of products aimed at the home.

The Avery Personal Creations include greeting card and label blanks that work with many inkjet printers, and allow a person to make custom-designed greeting cards, gift tags, etc. One product, the White Card Variety

with American Greetings card design software. It has a suggested retail price of US\$17.99, while a 15-card refill (no software) costs US\$10.99.

The other line of home products is called the Avery Kids line, aimed at 4-13 year-olds. A software application called Avery Kids Printertainment allows kids to design stickers,

cut blanks. The Printertainment Software Kit has a suggested retail price of US\$24.99, while a 10-sheet refill pack costs US\$8.99.

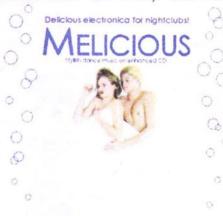
At press time, Canadian prices were not available, but the products should be available now at major computer retail chains.-DT

Contact: Avery Dennison in Canada,





Brave new enhanced CDs • Calgary-based Brave New Groove is producing dance re-mix albums for Spelling Entertainment's popular Melrose Place and Beverly Hills 90210



includes the Schmidtler Fe-Nie, the Lucidous Version, the Adulterous Se-Nie, and the Schmidt Republic Republic MERCHER, \sqrt{n} Selection and the Schmidter Republic Soras Transmit Transmit Of Child State 1953' Hurle Video on CO-80H (SAE) television series. The first album will be called Melicious, and will contain a bonus CD-ROM

should be available by the time you read this. Brave New Groove develops electronica music compilations on enhanced CD. This format allows music CDs to also have CD-ROM content, which can be accessed on Mac and PC computers. The company released its

Escape into a New World of Excitement!



first enhanced CD called IONIC in 1997. This album is a collection of more than 60 minutes of electronica music, plus a Virtual Art Gallery. The company says both the underground



music and the visual talent are primarily Alberta-based, with some content from other parts of Canada, the U.S. and Europe. IONIC is available at major music stores (HMV and Sam's), and independent outlets.-DT

Brave New Groove was established with the help of the Youth Entrepreneurship Program being run at the University of Calgary campus by HRDC. If you are an electronica musician who wants promotion with Brave New Groove, contact Frank at 403-240-5225 or mail your demo to BNG Box 1361, Stn M, Calgary, AB, T2P 2L2 for review.

Check out the Olympics on the Canada@Nagano site • The Canadian Broadcasting Corp. and the Stentor group of regional phone carriers are covering Canada's performance at this year's Winter Olympic Games on the Web. The Canada@Nagano Web site was launched Feb. 6, and will operate until March 8.

Contact: Canada@Nagano. http://www.cbc.sympatico.ca

Canadian AltaVista search engine launched • AltaVista, one of the most popular search engines on the Internet, is now available in a special version focusing on Canada-specific content.

Called AltaVista Canada, the search engine the features of the regular



AltaVista, but also includes more than 10 million pages of Canadian Web content in its index, according to the developers.

The TAS division of Telus, Alberta's regional phone carrier; Digital Equipment Corp., developer of the AltaVista search engine; and Edmonton-based Interdynamix jointly developed the product.—DT

Contact: AltaVista Canada, http://www.altavistacanada.com

Pen computing goes ballistic • Fujitsu Personal System's Stylistic pen tablet PC became the first mobile computer ever used as a mobile data tool during the Columbia Space Shuttle launch Nov. 19, 1997.

The Stylistic was used by astronauts to access real-time alternate landing data during liftoff. The pen interface proved easier to use than a traditional keyboard by astronauts



wearing space suit gloves. During the flight, a crewmember kept a Stylistic strapped to his thigh for easy access to Worldmap, a Windows-based application that allowed the astronaut to visualize the shuttle's location and orientation and identify a predicted touchdown point.

According to Geoff Walker, vice-president of marketing for Fujitsu Personal Systems,

"Once again, tablet PCs are being used in a working environment that requires 'on the spot' information. The innovative Stylistic pen tablets meet the computing needs of users in dynamic situations where laptops are cumbersome and inaccessible."

In particular, NASA is looking at mobile PCs to give space crews access to critical data in real time, and in usable graphic display form, so more decisions can be made by the crews rather than ground control.-JE

Contact: Fujitsu, Tel: 800-831-3183 http://www.fpsi.fujitsu.com

What's New is written and compiled by Jeff Evans, Keith Schengili-Roberts, David Tanaka and Megan Johnston.



Comdex starts '98 season with PacRim

BY ROD LAMIRAND



ancouver played host to the computer industry for three, rain-soaked days this past January. Comdex PacRim brought 30-odd thousand buyers, sellers, information technology managers, press members, and tire kickers, to over 200 exhibitors in its annual meet and greet party beneath the sails of the Vancouver Trade and Convention Centre.



A much smaller event than Toronto's Comdex Canada (and only about one ninth the size of the American mothership event that brought 250,000 attendees to Las Vegas for three days in November), PacRim showed some signs of a wave crested. And yet, notable absences aside, the usual demos and deals, wheeling and dealing, and all round, one-upmanship made for an exciting time.

Comdex has grown in the last four years from six events in four countries to 65 events in 20 countries. The newly renamed network of conferences and forums is called "ZD Comdex & Forums" after the Ziff-Davis group with which the original Softbank company has been joined.

On the floor considerable changes could be seen. The Internet was no longer the belle of the ball as at last year's show. At that event you couldn't swing a dead 386 without hitting a booth devoted to ISPs, Web authoring or Internet TV schemes.

This year everybody wanted to show a movie at their booth. Exhibitors selling anything remotely connected to the computer, monitor, graphics card, sound card, furniture or practically any other thing, had a DVD player or drive showing *Naked Gun*.

What was hot, and cool

Fujitsu showed a DVD movie on its 42-inch flat screen monitor. The \$17,500 view was amazing. Drool factor: 9.3.

Creative Labs was handing out giant paper bags advertising its DVD-ROM product, Encore Dxr2. Thus, the booth was packed and the show looked like a walking Creative Labs advertisement. One of *TCP*'s sister publica-

tions, Canadian Computer Wholesaler, awarded the Encore product an Innovation '98 Award for Technical Excellence.



The highest priced, floor real-estate was owned by Microsoft, which demo-ed Windows 98 among other things.

Digital had oodles of space with dozens of very fast machines. Its demo of Dragon Systems' Naturally Speaking written specially for

the Alpha worked like something out of *Star Trek*. That's what a 500 MHz machine will do when it has 184 MB of RAM.

The BC telco, known, surprisingly, as BC Tel, was blowing people's socks off with its ADSL service (which also won an Innovation '98 Award). When a 5 MB file downloaded in 14 seconds the attendant apologized for the delay!

Coolest booth goes to The Media, a Web authoring/video making/marketing company with a great sense of the aesthetic.

Toshiba showed a video of a woman beating up her laptop. The Toshiba computer went in the freezer, down a flight of marble stairs and even ended up under a car, all without breaking.

The LS-120 drive and disk combo from Imation Canada was being pushed as the Super Disk. Meanwhile, over at Sony, company representatives claimed their 200 MB drive would be out this summer.

Sony joined Epson, Canon and others in showing off their newest digital cameras. In



fact, **Epson** supplied the Epson 600, high-resolution digital camera with which we took some of the photos for this article. Digital cameras and dozen's of inkjet printers littered the floor from companies such as Canon, Epson, Sharp, Sony and others.

Symantec was showing off its new Uninstaller, which it claims will really and truly return your computer to exactly the state it was before you installed a new program, honest. Watch for the review.

Words from the top

The show had four keynote speakers over the three days: Don Calder, chief executive officer of BC Tel, spoke about coming bandwidth. Don Chapman, vice-president of Novell Canada, talked about his company's vision of the future and Novell's place in it. Dan Ling, director of research for Microsoft, pointed to his efforts to bring real computer voice comprehension to the desktop. Paul Flaherty, chief

architect for DEC's Alta Vista search engine, looked at the impact that access to immense amounts of current information will have on individuals, jobs and businesses.

At the Microsoft speech, the company gave out Money 98, Financial Suite, the full, boxed product. After 400 boxes they ran out but then swiped conference badges and promised to send out the product to the remaining 600 to 700 attendees!

The ubiquitous Steve Dotto chaired a Power Panel that covered topics related to the



Net when he wasn't posing for a photo for *The Computer Paper*. *TCP*'s booth was well attended by thousands of readers. A tip of the cap, to the many people with such kind words about the magazine.

The most innovative little item at the show was a product called Applica U2 from Concurrent Controls, Inc. U2 is an ISA card that allows you to run a cable to a different room in your home or home office. A little box connects to this cable. You buy a second mouse, keyboard and monitor and plug them in. Now, you can have two people typing, reading, copying, surfing at one time and you didn't even buy a second computer!

Sound too good to be true? We'll let you know in a future issue, because this is definitely one product we want to put through a full hands-on review.

The shape shifter

For all the glamour and glitz, there were signs that the show is in transition. Although the attendance, floor space and exhibitor numbers are roughly at expected levels, according to Bob Beirman, general manager of Canadian Events for ZD Comdex and Forums, they weren't more than last year.

I did notice a little less crush than in past years. I also noticed five or six empty booths and the absence of IBM, Apple, Lexmark, Corel and AOL (although Compuserve was there) to name a few. Beirman said some booths might be empty due to mergers or acquisitions or other unknowns. I asked if the empty spots had been paid for but he didn't know the answer to that question.

The general impression on the floor was that the growth that has made each year bigger than the last may have come to an end. It is not clear if the industry is balking at the cost of attending so many events or if they are questioning the goals achieved at these conferences. Beirman says the shows are being refocused on their original intent—businesses and business people.

Though it is unclear whether the international Comdex explosion will continue, it is a certainty that each year people will want faster computers with more storage, larger monitors with higher resolution and smaller portables with more features. As long as new technologies need to go from design and production through delivery channels and out to consumers, there will be a need to bring the various players together.

You can bet that, wherever and whenever that is, there will be a trade show and it will probably still be called Comdex. Comdex Canada '98 takes place July 8-10 in Toronto, Comdex Quebec '98 will be in Montreal Oct. 27-29. Next year PacRim will be renamed Comdex Canada West '99. □

Winner!

David Boulanger is the winner of the Kodak Digital Science DC210 digital camera

During Vancouver's Comdex/Pac Rim trade show in in January, Canada Computer Paper Inc. invited readers of our four publications (The Computer Paper, Computer Player, Canadian

Computer Wholesaler and Government Comptuting) to tell us what they thought about our publications.

Readers were invited to complete a survey, and the completed forms were placed into a bin. Mr. Boulanger's form was drawn from the approximately 1,300 reader survey forms that were completed during the show.

Mr Boulanger is a client services technician with the District of North Vancouver. He says his wife just completed a course in desktop publishing, so the camera will be a welcome addition to their studio.

To everyone who took the time to fill out the survey, our thanks. We'll be using the information to make sure we continue to give you what you want to read.



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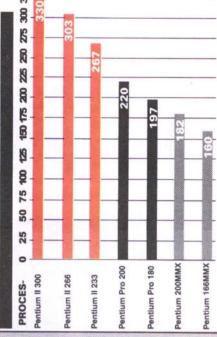
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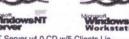
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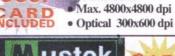


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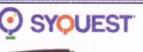
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VBPlus	166mmx	16MB	2.1GB	10X	12.1 TFT	\$2,830
VBPro	133mmx	16MB	1.4GB	10X	12.1 TFT	\$2,635
VBPro	166mmx	32MB	2.1GB	10X	12.1 TFT	\$3,235
VBPro	166mmx		3.0GB		13.3 TFT	\$3,560
VBPro	233 _{mmx}	32MB	3.2GB	20X	13.3 TFT	\$5,375
VBElite	166 _{mmx}	16MB	2.1GB	10X	13.3 TFT	\$3,850

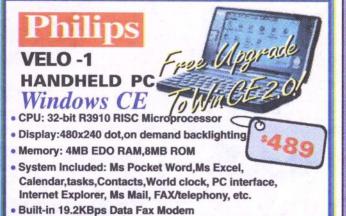




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Model	CPU	RAM	HDD	CD	Display	Price
310E	133 _{mmx}	16MB	1.6GB	10X	12.1 DSTN	\$2,205
380D	150 _{mmx}	16MB	2.1GB	8X	12.1 TFT	\$2,860
380ED	166mmx	16MB	2.1GB	20X	12.1 DSTN	\$2,760
380ED	166 _{mmx}	16MB	3.0GB	20X	12.1 TFT	\$4,335
380ED	166mmx	16MB	5.1GB	20X	12.1 TFT	\$4,720
560E	166 _{mmx}	16MB	2.1GB		12.1 TFT	\$4,230
560X	233 _{mmx}	32MB	4.0GB		12.1 TFT	\$5,999
765L	166 _{mmx}	32MB	3.0GB		13.3 TFT	\$5,000
770	200 _{mmx}	32MB	3.2GB		13.3 TFT	\$6,600
770	233 _{mmx}	32MB	4.0GB		13.3 TFT	\$7,570
770	233 _{mmx}	32MB	5.1GB		14.1 TFT	\$9,350
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Intel Pentium 233MHz MMX 32MB EDO Memory 3.1GB Hard Drive 20X CD-ROM 12.1" TFT Display 56KBps Data/Fax Modem

Model	CPU	RAM	HDD	CD	Display	Price
1540 _{DM}	150mmx	16MB	2.0GB	20X	12.1 DSTN	\$2,675
1592 _{DMT}	233 _{mmx}	32MB	3.1GB	20X	12.1 TFT	\$4,980
4160т	166 _{mmx}	16MB	2.0GB		12.1 TFT	\$3,680
4220т	266mmx	32MB	4.0GB	20X	12.1 TFT	\$5,660
7330т	150mmx	16MB	2.1GB		12.1 TFT	\$3,235
7350мт	166mmx	32MB	2.1GB		12.1 TFT	\$4,235
7360 _{DMT}	200 _{mmx}	32MB	3.0GB	20X	12.1 TFT	\$5,575
7370 _{DMT}	233mmx	32MB	4.0GB	20X	12.1 TFT	\$6,790
7380 _{DMT}	266mmx	32MB	4.0GB	20X	12.1 TFT	\$7,070
7710мт	150 _{mmx}	16MB	1.6GB		12.1 TFT	\$3,565
7730 _{MT}	166mmx	32MB	2.1GB		12.1 TFT	\$4,900
7750мт	166mmx	32MB	2.1GB		12.1 TFT	\$5,125
7770 _{DMT}	233 _{mmx}	32MB	3.0GB	20X	12.1 TFT	\$6,565
7790 омт	233 _{mmx}	32MB	5.0GB	20X	13.3 TFT	\$7,470
7792DMT	266mmx	32MB	5.0GB	20X	13.3 TFT	\$7,920

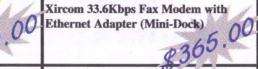


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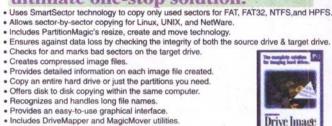
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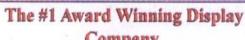
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	OPTIQUEST.	Q51	0.28mm	1024x768	13.7"	30-54KHz	\$ 290
	OPTIQUEST.	Q53	0.28mm	1280x1024	13.8"	30-70KHz	\$ 339
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	ViewSonic		0.28mm	1280x1024	13.8"	30-70KHz	\$ 365
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	ViewSonic	15GA	0.27mm	1280x1024	14.0"	30-69KHz	\$ 460
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	OPTIQUEST.		0.26mm	1280x1024	15.8"	30-69KHz	\$ 635
	OPTIQUEST.		0.26mm	1600x1280	16.0"	30-85KHz	\$ 759
	ViewSonic		0.26mm	1280x1024	16.0"	30-70KHz	\$ 700
17"	ViewSonic		0.27mm	1280x1024	16.0"	30-69KHz	\$ 765
1334	ViewSonic	EA771	0.27mm	1280x1024	16.0"	30-70KHz	\$ 739
	ViewSonic	GT770	0.25mm	1280x1024	15.9"	31-64KHz	\$ 839
and the same of th	ViewSonic	GT775	0.25mm	1600x1280	16.0"	30-80KHz	\$ 870
	ViewSonic		0.25mm	1600x1280	16.0"	30-95KHz	\$ 845
	ViewSonic	PT775	0.25mm	1600x1280	16.0"	30-96KHz	\$1,010
19/	OPTIQUEST.	V95	0.26mm	1600x1280	18.0"	30-95KHz	\$1,099
	ViewSonic	G790	0.26mm	1600x1280	18.0"	30-95KHz	\$1,179
212	ViewSonic	G800	0.28mm	1600x1280	18.4"	30-86KHz	\$1,470
	ViewSonic	G810	0.25mm	1600x1280	20.0"	30-89KHz	\$1,465
	ViewSonic		0.25mm	1600x1280	20.0"	30-95KHz	\$1,630
	ViewSonic	P815	0.25mm	1800x1440	20.0"	30-115KHz	LE LINE THE RESERVE AND THE RE





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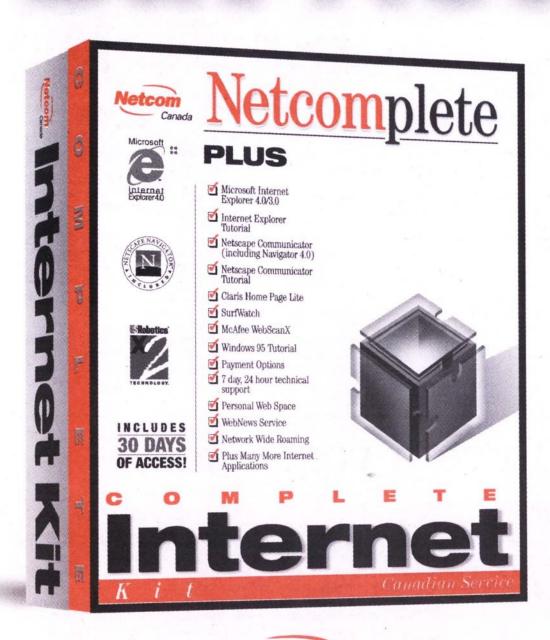
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DVD: oh what a feeling

DVD is set to blow your socks off! And 1998 will be the year that DVD exploded, took off, and took over. Long promised, much fought over and very cool, DVD is finally, really here. Whether you are a computer aficionado or a home theatre guru DVD is in your future. You can run but you can't hide—DVD is about to become *de facto*.

BY ROD LAMIRAND

VD players have really amazing features. They can perform all the functions of a VCR, such as stop, play, pause, fast forward and rewind. If the DVD title you are viewing supports extra features you can also:

- have captioning in other languages,
- listen to the sound track in other languages.
- listen to a voice over.
- · choose different camera angles,
- · jump to any point in the film,
- · bookmark segments of interest,
- adjust color, brightness and other video attributes.
- and even watch the film in letter-box mode (the wider format that films are shot in).

The DVD player can do all these things because the specification allows it. The point here is you must buy a DVD title that takes advantage of these abilities.

The experience: there's nothing like it

Stick in a movie and the screen goes blank just like the cinema. The sound begins to grow as the usual animated logos run across the screen.

Perhaps you have been to a movie recently

and it began with a downward shot of a movie marquee. As the camera pans down the big letters we hear little explosions, the sound moves from upper left to bottom right and the marquee spells out D*O*L*B*Y Digital. With DVD, that's what happens on your computer, too.

It's one of those moments. The drool factor is off the register!

Then the credits start to fade in and the film starts; and—unlike anything you have ever seen on a computer before—you have a completely real, smooth, high-quality movie. It's one of those moments. The drool factor is off the register!

So you can watch a movie on your PC. So what? This aspect of the technology isn't very practical. We used a 17-inch monitor and three speaker set, and although it was exceptional by any standards, you couldn't get the whole family around it. So, how do you justify getting a DVD drive?

The justification

What makes DVD such a formidable technology is that it is not just for showing movies.

Incidentally, DVD used to stand for digital video disc, which makes sense when you think of it as the replacement for laser discs or videocassettes. However, with new uses for the technology, the "video" makes less sense, so the new spin is that DVD stands for digital versatile disc. Some say it should stand for nothing at all—just DVD.

When you watch a movie on your PC you are really stealing a DVD from the living room home entertainment world and bringing it into your den or workspace.

If the only purpose of having a CD-ROM were to listen to CDs while you worked at your computer, you can bet precious few computers would have one. As it is, practically every computer sold today has a CD-ROM because it is useful to computing.

In the same way, DVDs are (or will soon be) useful to computing. Think about it. Already, Microsoft's Encarta encyclopedia, which came on two CD-ROMs, containing 20 to 30 video clips and hundreds of sound files, is available on a single DVD disc (which also contains the Encarta Virtual Globe and Microsoft's Bookshelf reference library). And that disc contains 35 percent more video, and twice the number of 360-degree views, thousands of sound files (how many bird songs are there anyway?) and a few thousand pictures to boot. What about a DVD disc with the 16 best



episodes of *Mad About You*? Heck without the commercials you could probably get 18 half hour shows on one disc.

Video is one thing, games are another. Look, for example, at the new DVD title Wing Commander IV by Electronic Arts. The game starts out with a short movie starring Mark Hamill and Malcolm McDowell.

During the high-quality movie, you get to make some choices. The movie stops and you decide, should I help this guy out, or should I just ignore him. That decision and others will come back to help or hurt you while you are playing the game.

To be able to offer branching, full screen, video producers need huge volumes of space. Fortunately, a DVD disc can have as much as 26 times the storage space of a standard 650 MB CD-ROM. DVD isn't a must-have yet, but it will be soon. □

Adding DVD to your computer

We test two DVD-ROM upgrade kits

BY ROD LAMIRAND

n behalf of our readers we contacted six manufacturers of PC DVD-ROM upgrade kits.

Diamond Maximum Systems Inc. of San Jose, Calif. did not have a Generation-2 DVD device ready in time for our review and did not have any Generation-1 devices left for evaluation.

The term Generation-1 refers to the first generation devices that came out in 1997. Generation-2 refers to improved DVD-ROM drives that have been arriving since October and which can read CD-R and CD-RW—something that Generation-1 DVD drives could not do.

Dynatek Automation Systems of Bedford, N.S. was not sure of its commitment to DVD even though its DVD-471TII upgrade had been well received. The company declined to send us a review unit. Techmedia Computer

Systems of Garden Grove, Calif. was also reluctant to send us its DVD-ROM drive until a new generation could be offered. Company representatives said they would try, but didn't send a unit. Utobia Corp. also of California said it would send its Utobia Hollywood DVD/MPEG-2 AC-3 Playback Kit, which is a first generation device, but it never arrived.

This left two units that did arrive: Pacific Digital's PDC DVD-ROM Kit and Creative Labs' Encore—both second generation, high-quality, DVD-ROM upgrade kits.

These DVD-ROM kits will upgrade a PCI Pentium computer into a DVD player. They take somewhat different approaches, but for the most part, they include the same components and have similar features.

Soft DVD

A collaboration between Compaq, ATI, Intel and Zoran Corp. has produced a software product that, under certain situations, can

decode and play back DVD MPEG-2 data. At the same time Apple has announced software support for DVD in its next release of OS 8, the Macintosh operating system. Refresh rates for the product are slightly less than what is achieved through hardware and there would obviously be considerable utilization of the computer's resources. However, the development could mean a powerful computer will have DVD ability without added hardware and expense.

The components

A DVD-ROM upgrade kit has two main components: a PCI card and a DVD drive. The card inserts into a free 32-bit PCI slot, while the drive fits into an empty bay.

The drive has the same look and dimensions as a regular CD-ROM drive. One of the few differences is that CD drives don't usually have the following warning, written in 12 languages, on them: "Warning visible and invis-

ible laser radiation when open. Do not stare into beam." Other items included are ribbons and cables, plugs and cords.

The installation

Both kits claim installation is easy. Yes, it is easy-ish. Put it this way, if you can't install a CD-ROM drive and a sound card, you might lose a lot of sleep installing one of these babies.

Here is how they fit into your system. The drive uses a standard power connection, which you probably already have hanging around inside your machine. If not, six bucks will get you a splitter at any computer store. Like on your CD-ROM drive, there is a thin audio cable that connects to the DVD card.

Lastly, there is an IDE ribbon that connects to your motherboard. This may be the Primary IDE controller ribbon or Secondary IDE controller ribbon. In the first case you

Continued on page 24

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THE ABCs OF DVD

Adding DVD to your computer

Continued from page 22

could have the drive and your hard drive on the one ribbon (not recommended though). In the second case, you could have the DVD drive by itself (easiest) or as the master to an existing CD-ROM drive.

In any case, when you have two devices on one IDE controller ribbon somebody has to play second fiddle and be the "slave" and somebody gets to be "master." On the primary ribbon your hard drive has to be the master, on the secondary ribbon, the DVD drive should be the master. In any event, there are jumpers on the DVD drive (and the CD-ROM) that must be set.

The DVD card may go in any PCI slot, though it may be recommended to put it in the Number One slot. Either way the slot must allow bus mastering. You will want to read your motherboard manual.

The DVD card has connections on it that run to a sound card and external connections for video and sound out. The whole operation will take between half an hour and a couple of hours depending on your system and your abilities.

Once the hardware is installed, you simply start Windows 95 and wait for it to recognize the new hardware. When prompted, stick in the disc with the drivers and it is done. These are true Plug and Play devices and will be easily recognized. After this, you must load the DVD player software. This software is like the remote control you use for your VCR. Once installed and the computer restarted, you are ready to go.

Both drives automatically recognize and play standard CDs and CD-ROMs.

We installed both cards into two machines to run them through their paces. One was a Dell XPS PII 233 MHz with 64 MB EDO RAM and a built-in Yamaha sound card. The Dell had an S3 Virge 3D video card with 4 MB RAM. The other machine a 200 MHz MMX clone with 32 MB EDO had an ATI Expression (2 MB) and a Sound Blaster 64AWE Gold with

PC-DVD Encore

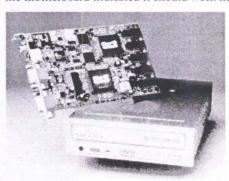
From: Creative Labs 1901 McCarthy Blvd, Milpitas, CA, 95035 Tel: 800-998-1000 www.soundblaster.com Estimated street price: \$540



The Encore is Creative Labs' second generation drive, which uses a technology the company calls Dynamic Extended Resolution. Thus the Encore is also known as the Encore Dxr2.

The Encore is pretty piece of work and comes well packaged. To get the best performance you will need Windows OSR 2 (Win 95B), which allows you to set Direct Memory Allocation for the DVD drive. Otherwise the system requirements are quite easy to meet: a 100 MHz Pentium PC, 16 MB RAM, 8 MB hard drive space, an SVGA graphics adapter with 2 MB RAM (minimum 800x600 at 256 colors, but 16-bit color-65,000 colors-support recommended), a PCI slot, and Enhanced IDE connector on the motherboard (bus mastering with DMA support recommended), an open drive bay, a Sound Blaster-compatible card (SB32, or better, recommended) and Windows

The kit installed relatively easily although the card wouldn't work in the PCI slot that the motherboard indicated it should work in.



In both machines, everything fit perfectly except that in the clone, the Secondary IDE Controller ribbon wouldn't reach to the drive bay without juggling the existing CD-ROM. Also, setting up the drive to co-exist with the existing CD-ROM caused some difficulty in the clone but none in the Dell. It was easiest to simply remove the CD-ROM and use the DVD drive. There is no real reason to maintain the original CD-ROM any-

Once up and running we were very pleased with the quality of the video. The kit comes with two DVD games: the unbelievable Wing Commander IV and the excellent Claw.

However, to test the video we ran the movie, The Mask, starring Jim Carrey. The sound and video were amazing. Even from a few inches away details were sharp. Dynamic Extended Resolution is a picture enhancement technology Creative Labs has devised to enable the playback of high-definition video with smoother images through the use of interpolation filters and a procedure called double-scanning. This process allows for a 60 fields per second refresh rate and helps avoid unwanted visual artifacts.

For this reason you must set your refresh rate to 60 or you will see what is called "combing." When DVD drives are not set up or running correctly, you can see horizontal lines in light-colored areas of the screen-especially, when there is quick movement. Encore worked very well, and when properly configured, the images were perfect.

The back of the PCI card does not have room for both S-video Out and a composite video out. To remedy this, the kit includes a modified S-video cable that splits into both plug styles. If your TV uses the composite (RCA) style jack you will need this to show movies on it. The cable is 1.8 m (6 ft.) long but you can get a standard S-video cable that is longer. "You will need a female-to-female adapter, which is available from Creative Labs for \$6 plus postage. Also on the card is an external S/PDIF (pronounced speedif) jack. This connection is for running sound to a Dolby Digital device.

The Encore Player (the software that lets you control the video) was far better than the software that came with the other kit reviewed here. The remote control-style controls are intuitive and aesthetic. Everything, in fact, about the Encore is well done. Creative Labs is going to be tough to beat. It has a second generation DVD kit that works well, reads practically every previous CD format, and costs only about \$500. This is a product whose time has come.

DVD-ROM

From: Pacific Digital Corporation 2052 Alton Parkway, Irvine, CA 92606 Tel: 714-252-1111 www.pacificdigitalcorp.com Estimated street price: \$540

Matching Creative Labs both in price and by offering a second generation device, Pacific Digital is pulling out all the stops. Like the Encore, Pacific Digital's DVD-ROM can read almost any previous CD format including: CD-I, CD-R, CD-RW, CD, and CD-Audio.

Unlike the Encore, Pacific Digital uses what is called an inlay approach, and therefore its minimum PC requirements are a little stiffer: 133 MHz Pentium PC or better, 16 MB RAM, 8 MB disk space, 32-bit PCI slot with bus mastering capabilities, Windows 95, an SVGA monitor and a PCI display card from an approved list.

The DVD card may work with other video cards, but for certainty you will want to check the list. It can be found on the company's Web page. Here are a few of the graphics cards

- ATI's Rage 2+ or Mach 64
- Matrox's MGA

- Number Nine's Imagine or Imagine 2
- S3's Vision 868, 968, Virge DX, VX, or Trio
- Tseng Labs' ET6000.

The PD DVD-ROM uses a Hitachi second generation drive (GD 2000) and a CineMaster PCI card. The CineMaster, by Quadrant International, performs the job of taking the encrypted and compressed data that comes from the drive and turning it into video, audio and/or data for your processor. (This is the same for all DVD drives.)

Inlay vs. overlay

What is different is that DVD-ROM drives that use the inlay method of displaying video then send that information to your video card to display on the monitor.

Overlay systems like the Encore Dxr2 simply add the video signal to the signal coming out of your graphics card and send it on the

This means that with an inlay system your monitor is still connected to your video card. In an overlay system, your monitor is plugged into the DVD-card, while a separate cable brings the video card signal into your DVD card-in essence the DVD card is a pass

The consequences of this are twofold. First, in an inlay system you must have a very good video card. Second, the inlay technique uses a certain amount of your system resources and will even bog down under some conditions. The benefit to this system is that you can, in theory, get a better, more detailed picture this way.

Continued on page 26

DVD and your TV

VD players cost between \$250 and \$1,200, compared to about \$550 for an add-in kit for your PC. Say that you now have a DVD player in your computer. It can play movies, and has video and audio outputs on the back. Why not send the signal from your computer to the TV or VCR in your living room? You get high-quality video and sound at a low cost, right? Not

Unless your computer and TV are side by side, you are going to have difficulties. If you manage to get a cable to connect your DVD-ROM drive to your VCR you may still have problems. One problem is that DVD and DVD-ROM drives don't live in the coaxial world. If your VCR doesn't have S-video (these are sometimes called mini-DINs and have four little pins inside), or at least RCA/composite jacks, you are out of luck.

Once you do get the video to your VCR, you will notice that the image on the TV is awful. You have forgotten that the DVD-ROM drive sends the CGMS signal to your VCR and your VCR now varies the brightness of your screen. The movie is wrecked. So, what do you do? You connect the video out from the DVD-ROM directly to a TV.

The catch: only high-end TVs have Svideo and/or RCA input jacks. There's more.

One of the biggest things advertised with DVD is superior sound quality. A set-top DVD player can give you amazing sound using the newest and highest quality sound standard—Dolby Digital. Dolby Digital, also known as AC-3, is a 5.1 sound system and the one that is used in theatres, some direct broadcast dish systems and the impending HDTV. The term 5.1 means there are five channels (front right, centre, and left; rear right and left) and a bass channel (sub-

DVD players, but not as of yet DVD-ROM drives, can take this signal, connect to six speakers and wow you. But the player will need either a chip upgrade or a stand-alone Digital Dolby device. There are DVD players costing well over \$1,000 that have Digital Dolby built in. If you have a device that can decode the AC-3 signal, you will need to run a second cable from your computer to it. The Digital Dolby signal can be read and sent out of your DVD-ROM card via the S/PDIF.

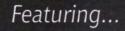
However, to be used, it must then run to a standalone Dolby decoder before running to receiver and speakers. Some new high-end computer speakers can use software to translate the AC-3 signal into very good threespeaker stereo but it still isn't what you would get from a full-fledged DVD player with Dolby Digital and six speakers.

There are other considerations and other possibilities, including a small transmitter that sends the data from your den to your TV-through the walls. Suffice to say, if you buy your DVD-ROM drive with the expectation of using it as a living room entertainment device, you have considerable homework to do.-Rod Lamirand

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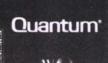
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Adding DVD to your computer

Continued from page 24

In our experience, a difference in quality between the two methods is not discernable. Although this would seem to suggest the Pacific Digital board is at a disadvantage, that is not the case, because the CineMaster inlay board has an internal video connection that can be used to make it perform in an overlay mode, with certain video graphic adapters.

The DVD player is competent, but, on both systems, often returned to the parental

control level of "kids." This meant that we would insert a DVD title that was rated as adult and the movie wouldn't play. The settings for the player were quite good and allowed extensive customization.

Overall, the Pacific Digital was easier to install but harder to fine tune than the Encore. The DVD-ROM drive came with a rather strange collection of movie titles including: Diana—The People's Princess, and Deadly Encounters, starring Larry Hagman! The game Spycraft however really takes advantage of DVD's capabilities.

This drive also has a S/PDIF plug and both composite and S-video outs. Pacific Digital has recently cut its price to compete with Creative Labs and thus has brought itself into real consideration as a recommended product.

The best choice

With only two drives available for evaluation it is difficult to discern whether overlay or inlay is the best route for DVD. As well, the two kits were comparable in almost every way.

We did have a small problem with the Pacific Digital kit. In both computer systems it

would not read the video from Electronic Arts' Wing Commander IV. And yet the Creative Labs drive would. We were unable to rectify this problem although Pacific Digital's tech support had run this title on the drive without difficulty.

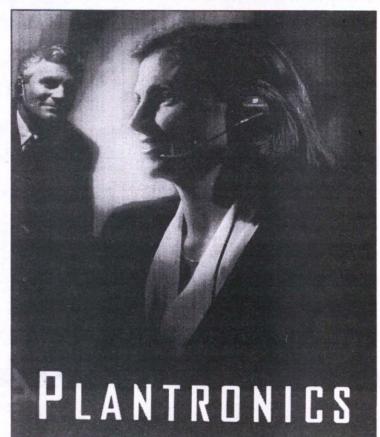
Either of these drives is a much better choice than the Generation-1 drives that are still out there and run slower. For its great player, great titles and gentler requirements, our recommendation goes to Creative Labs' Encore. Look for a flurry of new Generation-2 DVD hardware in the next few months.





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EDITOR'S CHOICE, COMPUTER PAPER JAN 1998



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NOTEBOOK FEATURES					
	14.1/15.1"	12.1"			
Intel CPU Options	P-166MMX-P23	ззммх			
Int. CPU L2 Cache	New models no	w with 512k cache			
Base / Max RAM	32 mb / 128 mb	32 mb / 72 mb			
Local Bus Video RAM	PCI 4 mb	PCI 2 mb			
Max.HDD, 2nd Hdd	5.1 GB, Y	5.1 GB, N			
Floppy Drive	1.44 mb	1.44 mb			
Display	14.1/15.1", 1024x	768 12.1",800x600			
External Monitor	External Monitor simultaneous, max1024x768				
Ports 1 par, 1 ser, 1 ext video port ,TV & Jystck					
PCMCIA slots	2x 32 cardbus	3x 16 slots			
SVGA, PCMCIA Drivers	Included	Included			
Pointing Device	Trackpad	Trackpad			
Battery Type, 2nd opt	NiMH, LiON opt	NiMH, LiON opt			
Sound	16-bit, speaker, m	ic, 1mb wavetable			
Windows 95 CD ver	Included	Included			
CD-ROM	New fast 20x	New fast 20x			
Carry Case, AC Adaptor	Included	Included			
Dimensions (inches)	10.5 x 13.1 x 2.3	9 x 12 x 2			
Battery Life w/power mgmt	1.5-3hrs	1.5-3hrs			





Awarded Editor's Choice The Computer Paper, December 1997

Editor's Choice Notebook

COMPARE: WHY PAY MORE & GET LES

Processor
Motherboar Fastest MMX notebook chipset with 512k pipeline burst cache fast 32 mb EDO ram, expandable to 72mb Video Trident 9385 cyber chipset, 2mb, zoom capable Display 12.1" Active Matrix, non glare, no radiation lcd Sound card Voice/Fax/Modem Optional 33.6 or 56k Built in 1.44mb floppy Simultaneous with built in CDROM Simultaneous with Sim Video
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XP6200-200MMX, DSTN	\$2508	\$2573	\$2743	SUID TO
XP6200-233MMX, DSTN	\$2628	\$2693	\$2863	MET LE
XP6200-200MMX, Active	\$2982	\$3047	\$3217	
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Floppy Drive

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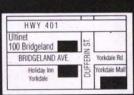


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How we got from CD to DVD

BY ROD LAMIRAND

hen the compact disc (CD) kicked audio cassette tapes out of record stores, it was only doing what tapes had done to vinyl LPs and good old eighttrack tapes. CDs were a big improvement with more than 70 minutes of quality audio. When the computer industry got tired of swapping 1.44 MB floppies, it only seemed natural to look to the technology of the CD.

How it works

CDs work by burning little holes in a layer of material below a transparent protective outer coating. These little holes are called pits, while the spaces between them are called lands. The pits and lands are arranged along a path that spirals around the CD in one long continuous

A laser shines a light along the path and senses the reflected light. Where there is a pit, no light is reflected. This represents data digitally, in just that same way a magnetic on/off represents a 1 or 0 on a magnetic storage device like your hard drive.

The letters DVD once stood for digital video disc, but now stand either for digital versatile disc or for nothing at all-depending on who you talk to.

A DVD disc works in a very similar way but with a few improvements. First, the pits and lands are much smaller and closer together. This means you must have a more accurate and sensitive device to read these discs-in other words you need a DVD player. It also means you can place 4,700 MB (4.7 GB) of data where 650 MB once existed!

Secondly, DVD discs can have two layers of data, one below the top layer, which is semi-transparent. By altering the laser, and the lens that reads it, the DVD drive can read either the top or bottom layer without interference. This means you can put 8.5 GB of data on one side. That's approximately two

There's more. Remember, DVD discs can be two sided. The result-17 GB of data on one CD-size disc. That's eight hours of video or 1,900 minutes (31 hours) of audio.

Thirdly, unlike CDs, DVDs need to be able to jump from one place on the disc to another. Thus, they are organized differently and use a system that contains both content and navigational information. This two-track organization allows the publisher of a disc to embed commands and menus within a track buffer to point to audio, video and data content. This is what makes it possible to have user input and interactive story lines in DVD videos.

The name game

Just as we have CD players which play CDs, we also have DVD players which play DVDs. In one product form, DVD players are consumer electronics devices that would eventually replace the VCR or laser disc (LD) in a home entertainment setup.

Neither the VCR nor the laser disc player can compete with the DVD player for video and audio quality, or for the amount of information that can be stored. While the LD has two hours of video on one side, the DVD can have fourand the discs themselves are half the size. As well, LD players have only two digital audio channels. DVD can have up to eight. (Consumers with an investment in LDs can relax: there are DVD players that will read LDs.)

When we use a CD to hold data for a computer we call it a CD-ROM (compact disc-read only Memory), and call the player a CD-ROM drive. Similarly, when we use a DVD disc to hold computer data we call it DVD-ROM and its player, a DVD-ROM drive. This nomenclature is neither universally agreed upon nor perfectly logical but the best that there is at this time.

Standards and industry factions

The DVD standard has been agreed to and has been slowly infiltrating the computer, stereo and record stores for about a year. However, there are a few areas where no consensus has been reached.

One is the area of DVD audio. DVD can, and probably will, replace CDs as the preferred medium for the recording and distribution of music. It won't happen quickly but it will happen. The reasons are that, whether the music industry jumps on the bandwagon or not, the number of DVD players and DVD-

Continued on page 32



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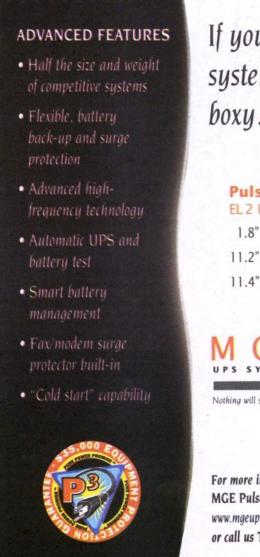
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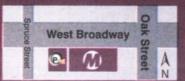
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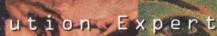




















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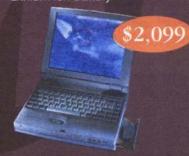
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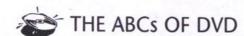
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How we got from CD to DVD

Continued from page 29

ROM drives that will pour into the market will make this moot. Once a large number of people can play a DVD audio disc, the music industry will have no option but to opt in. Still, it is possible that DVDs could stay out of the music field for some time.

Another lack of consensus is found when we look at recordable DVD drives. In the '70s,

movie studios were very worried VCRs would erode their revenue by allowing the public to copy movies. In some ways it has. For the most part however, the development of new VCRs, which make copying studio videos difficult, has limited the effects of this practice.

Software companies have been equally worried about the various flavors of rewritable CD-ROM drives that are now available. CD-W (CD-ROM Writable) would allow users to copy

games and programs. Even worse, CD-RW (Re-Writable) would allow them to copy one CD and then later another on the same disc. This has largely not come to pass because of the cost of such drives; the cost of these types of discs; and, the incompatibility of different protocols that have developed due to standards wars

A similar standards battle is being fought in the world of DVD. As we said above, the DVD

standard has been agreed upon. However, the next generation of devices are writable DVDs (i.e., devices that give the ability to record data on blank DVD discs). There are a number of groups that are vying for ownership of the standard in order to earn future dollars.

DVD-R (write-once) is a standard that was finalized in September by a group known as the DVD Forum (which is the new name of the DVD Consortium that created current DVD standards). This body had expected DVD development to follow that of CD-ROM. Thus, there was to be a period of time where DVD-R was introduced followed by a rewritable standard known as CD-RAM (random access memory here means re-writable). However, some developers want to skip the whole write-once step and are concentrating on CD-RAM.

Meanwhile, a splinter group comprising Sony, HP, Philips, Mitsubishi, Yamaha and Ricoh has announced another DVD standard called DVD+RW that is re-writable and offers 3 GB of storage as compared with 2.6 GB for CD-RAM (writable and re-writable DVD discs are single layer and otherwise different than factory-mastered products, limiting their size).

Finally, NEC is suggesting another DVD solution that, like Sony's, is also incompatible with the DVD Forum's. □

What's to watch: DVD titles

It is estimated that there are over 6,000 DVD movies currently available. This may be true, but from our limited research many of these titles are little more than a plain copy of the original movie. A visit to HMV, A&B Sound, Costco and other Vancouver stores revealed that most releases do not have captioning, never mind the captioning in two or three language that is possible with DVD technology. As well, most of the titles did not have more than the one soundtrack.

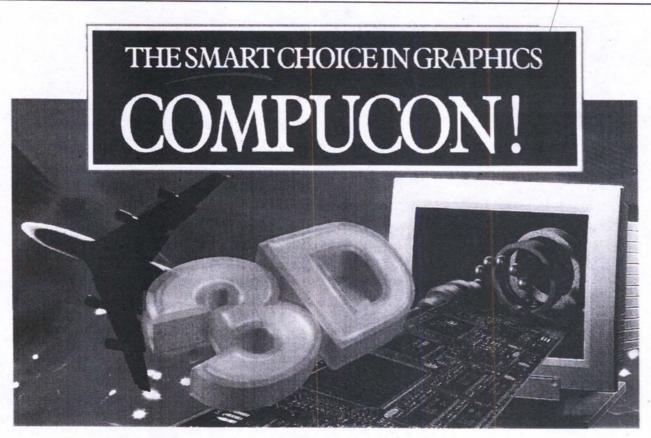
The Mask and other new releases have English, French, and other languages—even a director's voice over. But additional camera angles are rare (clearly, it would not be easy to get additional camera angles for an Elvis Presley movie made in 1962, but for newer movies it would be fairly simple), and wide screen is often not supported in these titles.

Consumers are unlikely to pay the \$26 to \$32 per movie currently being asked in stores, unless the extra capabilities of DVD are utilized.

The cheapest price we found for DVDs was at Costco, where the *Director's Cut of Blade Runner* cost \$21.95. Other titles like *Austin Powers* and *The Rock* were priced in the range of \$29.95.

Games are now arriving for DVD-ROM but at a slower pace than movies because there are fewer DVD-ROM drives than players. If the PC is ever going to match dedicated machines like Nintendo in quality, DVD-ROM is the way they will do it.

Educational and reference software companies, on the other hand, are really making moves in the DVD arena. There are dozens and dozens of DVD-ROM titles expected this spring—from atlases to medical programs, and computer-based training to encyclopedias.—*Rod Lamirand*



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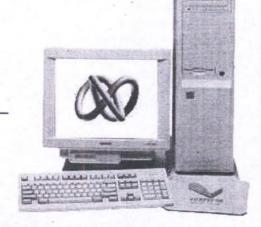


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Graphics toolkit: can the PC cut it?

BY GRAEME BENNETT

Like an old story passed down from generation to generation, the traditional wisdom in the computer graphics field has been that the Mac is a superior platform for such endeavors.

Indeed, for much of the past decade, the majority of the magazines you've held in your hand (including The Computer Paper) and the Web sites you've perused have been assembled and published using primarily Mac-based tools. But, with the ever-widening gap between the cost of a typical PC and a similarly configured Mac (at this writing, the lowest priced new Mac from Apple is more than double the cost of a roughly comparable Pentium-based PC clone), and the release of virtually every major Mac graphics and publishing title on the PC, does conventional wisdom still hold true? Is the Mac worth twice as much? And, regardless of whether it is or isn't, is there a viable alternative? Can the PC cut it?

As a teacher of both Mac- and Windows-based graphics courses and a long-time user of both platforms, I will begin by saying that it is definitely possible to use a PC to produce work of comparable quality to a Mac. With that said, it is also worth mentioning that, on a recent CD cover project I worked on, I encountered what can most charitably be described as raised eyebrows when I prepared the work using a Windows PC and handed over the project on a PC-formatted (ISO 9660) CD-R (CD recordable) disc.

The prepress people my client wanted to deal with were so PCaverse that they didn't even know their Macs could read a CD created on a PC (it can); nor did they know how to deal with the font substitution issues involved with going from a Windows-based Garamond" font to a Mac-based "ITC Garamond." After numerous foul-ups caused by the PC-to-Mac translation process they insisted on, in order to prepare the files for output (a process known as "preflighting" in the prepress trade), we gave up on them and went to another company that was more well-versed in the Ways of Windows.

Here, then, were the main issues

I owned both a Power Macintosh (a PowerMac 8100 with 80 MB of RAM) and a Pentium-based PC (a Pentium 180 MHz with 64 MB of RAM, dual-bootable with Windows 95 or Windows NT 4.0). Because the CD cover involved high-quality scanned images and a lot of

Photoshop work, I decided I would have to buy a new hard drive (or comparable removable storage device).

After comparing the cost of a 5 GB SCSI hard drive for the Macintosh, it became clear that I could save several hundred dollars by purchasing an IDE-based drive. As my PowerMac model, unlike some of today's Macs, did not support IDE drives, I then began evaluating drive options and other hardware, software and production issues to determine whether I could successfully complete the job with my PC.

After determining that the fonts (primarily, the ITC Garamond family) and software tools (Photoshop 4.01, Illustrator 7.0 and either PageMaker 6.5 or QuarkXPress 3.32) I wanted to use worked well on the PC platform, I purchased a Maxtor DiamondMax 5.1GB EIDE drive, which I then installed (and have since been very happy with), carefully calibrated my monitor and output devices for accurate color and got down to work.

As with most jobs, the first phase of the project had relatively little computer involvement. The client and I got together and bashed out the budgets, schedules and overall concepts for the artwork. The title of the CD was to be *Celtic Harp of Dreams* and an important aspect of the cover artwork was to convey a dreamlike state.

It was decided that some surrealistic touches, like a harp floating on water and/or a "courtyard" made in the form of a giant Celtic knot, might be concepts worth pursuing. Because one of the images on the cover was to be based on an existing piece of out-of-copyright artwork, I had the image scanned using a high-quality drum scanner.

Although the \$80 one of these high-quality images costs to acquire is nearly the total price of one of today's cheapo flatbed scanners, such inexpensive units are not capable of the image quality I wanted for a professional job. Indeed, even an image saved at the highest resolution on a (Kodak) Pro Photo CD disc is not of the quality captured by a decent drum scanner. The service bureau where I had the scan done saved the file onto the SyQuest removable platter I had supplied and couriered it back to me, along with the originals.

Reality check: even with the best scanners, the old adage, "Garbage in, Garbage out," applies.

At my office, I disconnected the external SyQuest drive from the SCSI port on my languishing Macintosh and connected it to the Adaptec SCSI interface installed in my PC (such interfaces are shipped with virtually all SCSI-based PC scanners). Indeed, because I already had a scanner connected to the PC, I connected the SyQuest drive to the second SCSI port on the back of the scanner, making sure to set each device to a different SCSI ID. I then attached the supplied "SCSI terminator" block to the second SCSI port on the drive. This terminator (technically, a "terminating resistor") is necessary to prevent the signal from bouncing back and forth in the SCSI chain and interfering with the communication of the various devices in

Fortunately, there were no problems after powering up. Windows 95 recognized both the SyQuest device and the scanner connected to the Adaptec SCSI interface (and, indeed, the Adaptec EZ SCSI software informed me that I could connect several more SCSI devices if I wished.)

At this point in the procedure I was still evaluating whether I should use Windows NT or Win95. A few issues with NT convinced me that it was still a little too close to. the bleeding edge for my requirements. For one thing, I did not have a copy of Adobe Type Manager Deluxe that worked on NT. (This software has since been released.) Although my tests of Photoshop under Windows 95 had been fairly uneventful, I had read some disturbing reports of crashes when attempting memory-intensive Photoshop operations under Windows NT (a problem that the Mac version is not immune to, either.). QuarkXPress 3.3 seemed to work under my service-packenhanced NT, but several cosmetic aspects were dodgy and it, unlike PageMaker, was still not available as a 32-bit release (another situation since resolved with the release of QuarkXPress 4.0). The fact that QuarkXPress 3.3's EFIcolor color management system is now officially discontinued was yet another











motive to encourage me to undertake the production with PageMaker. As it turned out, this decision raised a few eyebrows, too. More on that later.

More urgently, the data on the SyQuest disk supplied from the service bureau was in Macintosh HFS format and I could not read it under Windows NT. Switching to Windows 95, I installed MacDrive95 from Media4 Productions. This excellent utility allowed me to read and write Mac media (with long filenames intact!) under Win95 with no problems.

Reality check: most graphics service bureaus are strongly Mac-oriented.

Yet another problem cropped up soon thereafter. My client supplied the text for the cover on a Mac floppy diskette and I could initially understand why MacDrive95 could not read it. Bizarrely, I could not even read the disk on my Macintosh! Can you guess the problem?

Although it is true that a PC's floppy drive cannot read old 800KB (GCR format) Mac disks, this disk was a high-density 1.4 MB floppy, which should not have been a problem. It was only when I asked the client what type of Mac she used to create the disk that the answer became clear. The Mac, she noted, was a "really old one."

As it turned out, she had formatted a 1.4 MB disk on a Mac that was so old, it didn't know 1.4 MB disks existed. In other words, it was for-

matted as 800KB. I stuck a piece of tape over the hole on the top-left side of a HD disk that modern disk drives use to differentiate between double-density and high-density disks, and it became readable in my Mac. I transferred the files to a PC-formatted disk (which the Mac can read and write) and finally got the documents onto my PC. Whew!

Reality check: the Mac was necessary to solve this problem and, truth be told, my PC efforts were looking pretty dubious to me at this point.

For a border around the main image, I scanned some Celtic knot patterns out of a clip-art book of such designs. Because I knew that the Celtic knot art would be greatly altered, I was not terribly concerned with the quality of the original scan. I used an Epson Expression 636 scanner (which proved to be quite a bit better than the HP ScanJet IIcx I also experimented with) to capture the Celtic knots and some other incidental artwork for the booklet that would comprise the CD cover.

In fact, scanners played yet another role during this production. I used OmniPage OCR (optical character recognition) software to eliminate the task of retyping a couple of pages of typed lyrics for which there were no disk-based originals. These files, like the Mac documents, were saved in MS Word format, so that they could be later placed with PageMaker.

Continued on page 37

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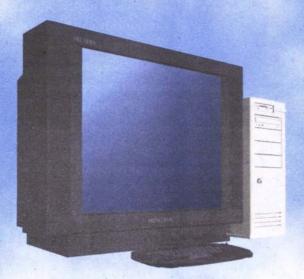
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FISTFUL OF GRAPHICS

Graphics toolkit: can the PC cut it? Continued from page 34

As the work proceeded on the cover, I kept several backups of the files, including copies 'saved nightly onto removable SyQuest disk for remote storage, in case of fire or theft. I used the Layers feature of Photoshop to assemble images with shadows and border elements that could easily be altered as per the client's requests. For the Celtic knot border, I used a Photoshop plug-in collection from Alien Skin called Eye Candy to give it the look of beveled stone. Along with this, I composited a "marbleized" pattern from a lovely collection of marble textures on CD-ROM called Marbled Paper Textures from Artbeats.

I should also mention that I worked exclusively in CMYK mode, to avoid any possible unpleasant surprises that (often!) occur when an RGB image is converted to CMYK color. As many of the elements of this cover were handcolored (primarily using Photoshop's Variations command upon carefully masked selections), this was especially important, as was the need to carefully calibrate my monitor for accurate color, and save the settings using Photoshop's Monitor Setup dialog.

To develop the "dreamlike" qualities of the scene, I did many tests of various effects, using a variety of 2D and 3D tools. I eventually settled on the idea of using MetaCreations' Bryce to render a scene in which, beneath a fantastic sunset, a harp was reflected in a pool of water. Rather than create the harp from scratch, I searched the Internet and found a harp image in one of the many collections of DXF files on the Web. As I knew that the DXF harp would be replaced, in the final scene, by a photo of a real harp, I was using it only to generate shadows and reflections on the 3D water.

I performed some small test renderings and, when I was satisfied with the look, I created a scene at a resolution that would be appropriate for a CD cover (roughly 5 inches square). Considering the 150-lpi dot screen my press person said would be appropriate for the glossy paper we were eventually going to print on, this worked out to a 300-dpi rendering, using the following formula:

For color work, the dots-per-inch resolution of your scanned images needs to be no more than twice the number of lines-per-inch of your output device's halftone dot screen.

In other words, a 300 dpi scan is perfect for 150-lpi output. Scanning at higher resolutions is sometimes useful to reduce moiré patterns and address other issues, but such super-sampled images should be reduced to fit this equation before printing. More resolution in the output file just wastes hard disk space and slows printing.

Once rendered, I used Photoshop's Rubber Stamp tool to erase the harp from the scene, leaving only its reflection in the water. I then dropped the photo of the real harp, cut out using Photoshop's color range selection tools, in its place. If I had known about it, I'd have used the excellent Chromatica plug-in from Chroma Graphics Inc. (Tel: 415-375-1100) to further ease this masking and selection process. Even without Chromatica, however, the end product looked quite convincing after a little retouching.

The rendered scene was then composited with the scanned imagery and the various elements were colorized and retouched to blend smoothly.

Once all the Photoshop work was done, I saved the files in CMYK TIFF format for output

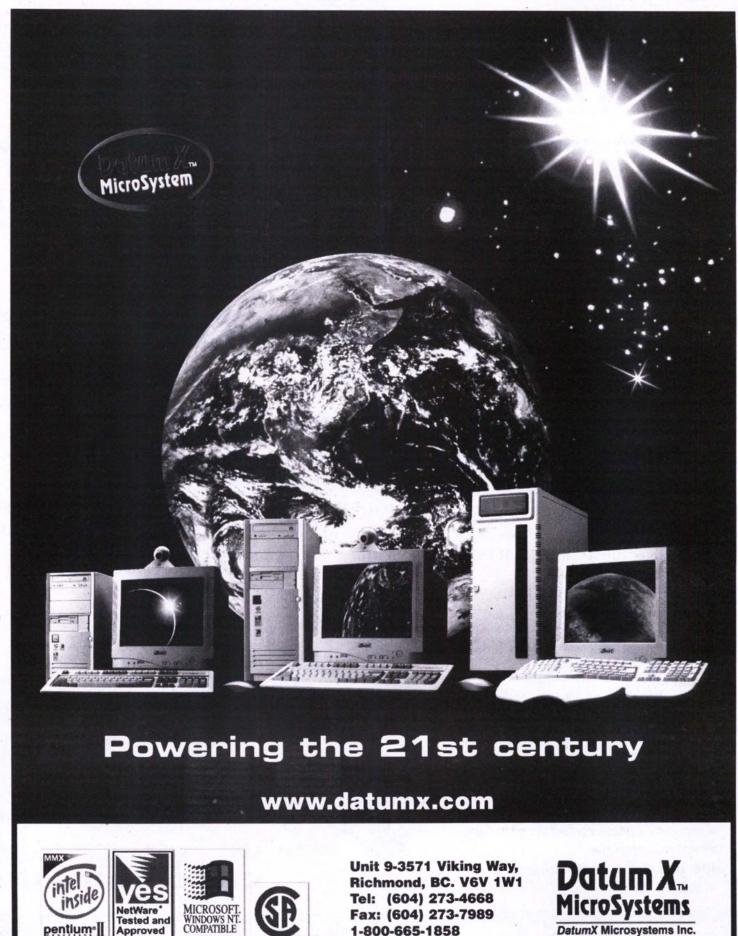
and saved a copy one last time in Photoshop Document (PSD) format. Saving a Photoshop format version of the file is important, as TIFF, EPS or JPEG files do not save the Layers and certain other attributes of the original file. Thus, if I ever want to rework the file (for example, to create a cassette jacket or DVD cover), having access to the individual layers; paths and saved selections may prove handy. I also printed a color "proof of concept" sheet

on a dye-sublimation printer, snipped the image out and inserted it into a jewel case for presentation to the client. When deadlines are close, such details can ease tensions.

Because I'd like to be remembered as the Backup King, I also converted the files to JPEG format and saved a copy in that compact format on a floppy disk, too. Remarkably, my 74 MB Photoshop version of the cover, when saved as a high-quality JPEG file, fits on a single 1.4 MB floppy disk!

Finished with Photoshop, I set to work assembling the images in PageMaker. I found that PageMaker's on-screen display of the CMYK TIFF images to be inaccurate-even after all my careful calibration. I had much better on-screen accuracy by returning to Photoshop and re-saving the files as CMYK EPS (encapsulated PostScript) files.

Continued on page 44



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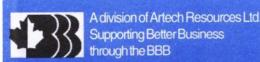
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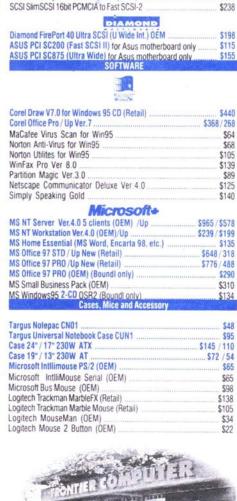
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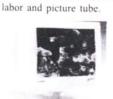
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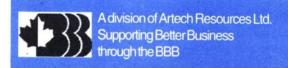
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Graphics tools for Web page design

BY LINDA RICHARDS

The Internet is awash with graphics tools that promise to do everything from squishing your images to (almost) making toast. A veritable sea of choices, and each one—it seems—with greater claims than the last. The fact is, however, that you don't really need an Internet tool to make your toast. Most of us have a toaster that handles that job very nicely. However, if we're doing any kind of creation or experimentation with graphics for the Web, we do need tools that work and work well.

Like a fish without a bicycle

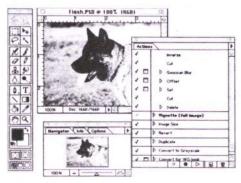
While almost every software developer will tell you their graphics tool is the one you can't live without, there are actually very few pieces of software that will cause you to cease breathing if you don't own them. In fact, there are precisely none.

But (and you knew that "but" was coming, right?) there are a very few that are so necessary that attempting to make Internet graphics without them is like eating sushi without chopsticks: you can do it, but your hands smell like fish.

Let's look at some of those essential and nearly essential software packages and see what's so cool about them.

Adobe Photoshop 4.0

Platforms: Macintosh, Windows 95/NT
System requirements Macintosh: 68030 or greater
processor or Power Macintosh, Mac OS 7.1 or later,
16 MB RAM, 25 MB available hard disk space, VGA or
higher resolution monitor, CD-ROM drive.
System requirements Windows: 486 or greater
processor, 16 MB RAM, 25 MB available hard disk
space, VGA or higher resolution monitor, CD-ROM drive.
http://www.adobe.com



The perennial top of the heap, Photoshop is—for many reasons—the Web designer's number one tool.

Almost every type of list of this nature will have Adobe Photoshop at the top—and for very good reasons. Photoshop is to a Web designer what tofu is to a vegetarian. You can get protein other ways, but it's a lot easier if you like tofu. There are other ways to develop Web graphics, but it's a lot less work if you have Photoshop.

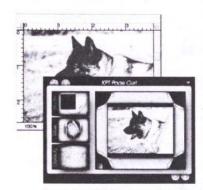
Photoshop does more for bitmap graphics than just about any other software package going. All aspects of preparing a graphic for the World Wide Web can be handled efficiently in Photoshop. Many scanners ship with a plug-in for Photoshop so you can handle every angle of pre-Web production in this program.

The bad news: Photoshop is a very sophisticated software package and thus presents the new user with a hefty learning curve. The new Photoshop user can expect to invest some serious time into really learning the program and all that it can do. Also, it ain't cheap. But it's a worthwhile investment: if necessary, curtail your hardware habit for a while in order to pay for Photoshop. Do you really need that faster CD-ROM drive? That shiny new modem? I didn't think so. Save your beans and spring for the big cheese of design packages. Because it takes more than a couple of beans.

Kai's Power Tools 3

Platforms: Macintosh, Windows 95/NT
System requirements Macintosh: A host application
that fully supports Photoshop plug-in architecture;
Macintosh 68040 or greater with math coprocessor;
2.5 MB RAM (sharing host's memory allocation); 8-bit
video; Mac OS 7.1 or greater; CD-ROM drive.
Recommended requirements are a Power Mac; 16 MB
RAM. Spheroid Designer, Texture Explorer Pro and
Interform

System requirements Windows: A host application that fully supports Photoshop plug-in architecture; operates within host application's RAM (see host for RAM requirements); 16-bit video; Windows 95/NT; CD-ROM drive. Recommended requirements: Pentium processor; 16 MB RAM; 24-bit video. http://www.metatools.com



For serious Web effect magic, Kai's PowerTools are tough to beat.

Okay: this one isn't strictly essential. However, if you've already blown the wad for Photoshop, Kai's Power Tools 3 is a very cool package to have around. Power Tools work with Photoshop as well as any other bitmap program that offers 100 percent support for Adobe Photoshop plug-ins. Check the label of the package you have, because it'll tell you on the outside of the box if this is the case. For example, Kai's Power Tools will work with both Jasc's PaintShop Pro and newer versions of Corel's PhotoPaint.

Kai's Power Tools 3 puts a serious amount of magic into your graphics for the Web. And where Photoshop is challenging to learn, Kai's Power Tools 3 almost creates cool effects all by itself.

Continued on page 49

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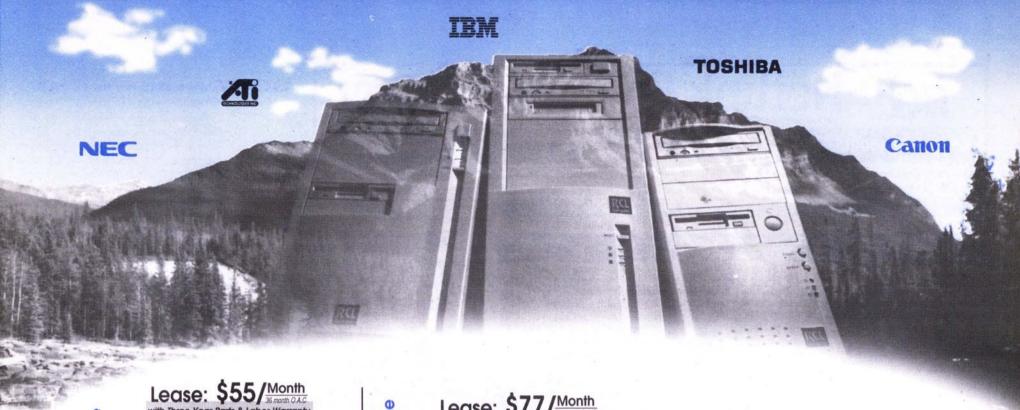
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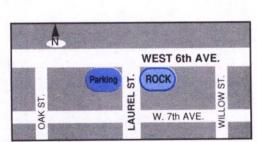
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Graphics toolkit: can the PC cut it?

Continued from page 37

By the way, it is not well known that using Photoshop to save a grayscale TIFF as CMYK produces a better-balanced set of gray tones upon printout. This is because converting to CMYK invokes Photoshop's top-notch separation engine, which handles the grayscale information more efficiently than when in grayscale mode. As an added benefit, the EPS format also allows saved files to include a feature called clipping paths that allows you to save images in non-rectangular shapes.

Although I did not use clipping paths on this job, I did use a Transfer Function—information that helps optimize dot gain for the specified paper stock. Unfortunately, a detailed discussion of these important issues would require more space than I have available here. Ask a prepress expert about UCR (under color removal) and GCR (gray component replacement), if you are curious... and he

or she has plenty of time.

At any rate, the job was (finally!) nearing completion. EPS images and text now in place, I printed off samples and gave them to a professional proofreader (never proofread your own work!) and printed the files to disk as PostScript. I then ran these PS files through Acrobat Distiller to simulate the raster imaging process that the Linotronic imagesetter at our service bureau would soon attempt as it output film negatives from the files. Success in Acrobat meant likely success with the Linotronic.

As seasoned graphics pros will surely know, I am glossing over many details that are worth discussing, such as how to determine how much bleed a page should have (ask!), whether or not you should manually strip images for booklets together (we didn't, but could have avoided some wasted film if we had!), how to prepare a service bureau output request form (carefully!), and on and on.

As the deadline loomed. I wrote the filesover 200 MB in all—to a CD-R disc and sent it, with the output request form and a dye-sub printout, to the service bureau the client insisted on dealing with (mistake number one!). I requested a matchprint (color key) along with a set of negatives. Once the color key had been approved by the client, we were into the home stretch.

We had a couple of foul-ups. The first involved a PC/Mac font substitution issue. Although I had supplied the fonts used on the disc along with the files (a practice I heartily recommend), it seems the person at the service bureau didn't want to (or didn't know how to) output a PageMaker file from a PC, and tried to do it on a Mac.

Rather than convert the supplied PC font using a Mac program like Macromedia's Fontographer, he or she manually substituted a very poor substitute font: Adobe Garamond, which is both heavier and shorter in x-height than the ITC equivalent. As mentioned above, they also botched up the booklet crop marks by attempting to avoid a \$150 stripping charge and incorrectly reformatting the accordion-folded booklet on a single page.

Thankfully, all these problems were easily resolved by simply going to a different service bureau. There's a lesson in there somewhere. Would this job have gone more smoothly on a Mac? I suspect so. Was the PC up to the task? Definitely, but remember: the client only cares about the result. If you have problems, for whatever reasons, they'll be less likely to want to do business with you in the future.

Thus, the next time a job like this comes along, I'm picking the service bureau, or I'm shopping for a Mac hard drive.

Now, should I use my Mac or my PC to print out that invoice?

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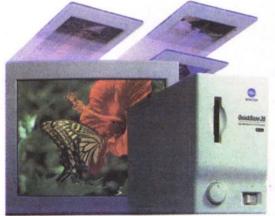
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FISTFUL OF GRAPHICS

Graphics tools for Web page design Continued from page 41

PaintShop Pro

Platforms: Windows 95/NT 4.0 or later System requirements: 486 or greater processor, 8 MB RAM, 5 MB available hard disk space. http://www.jasc.com

If you really, really want to make graphics for the Internet but really, really don't want to shell out the big bucks for Photoshop there are a few alternatives. You'll encounter them online where software gathers, at places like download.com, or you'll hear about them in magazines like this one. And if you try them, you'll find that some are better than others. And you might uncover a rare pearl in the Photoshop imitators who aren't as good, but who do what they do very well.

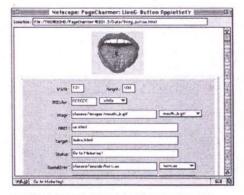
Jasc Software's PaintShop Pro is the best of a big field. It meets all the criteria: it allows you to manipulate and convert photographic and other art files into all Web formats. It is a complete tool set that lets you manipulate and retouch photos, enhance and alter images and has a full set of fun filters.

While PaintShop Pro lacks some of the integral features that make Photoshop Photoshop, it compensates with strengths in other areas-PaintShop Pro is very inexpensive, and since it's a less sophisticated program, the learning curve is less steep.

The bad news is that there is no Mac version, nor is there likely to be. So Macintosh users lose out on this one.

PageCharmer 1.5

Platforms: Macintosh, Windows 95, Unix, Solaris, Next System requirements: No minimum configuration specified: must have Netscape Navigator 3.0 or later or Microsoft Internet Explorer 3.0 or later. http://www.mainstay.com



Java for everyone: easy as booting your browser. One CD-ROM covers all the platforms, too.

Investing a lot of time learning Java and then implementing it on your site is probably not a good idea. On the other hand, there are a lot of simple and elegant little things that can be done economically and easily with Java-style technology.

Mainstay's PageCharmer is a good compromise. What you get, essentially, is a box full of customizable Java applets. You can add things to your Web pages like graphic and text marquees, animated borders, live buttons (for those au courant mouseovers everyone keeps yammering about), live image maps and

Though there are a number of similar applications floating around out there, PageCharmer comes out on top for a couple of reasons: it's cross-platform, and it makes creating and installing Java applets practically plug and play.

Ditherbox 1.0

Platforms: Macintosh, Windows 95/NT System requirements: A host application that offers full support of Photoshop plug-in architecture. http://www.ditherbox.com

From the exceedingly useful little tools department comes Ditherbox. If you've made graphics for a Web site before, you'll know that dithering is a bad thing. Or can be when applied to the graphics you've slaved over to perfect.

The cross-platform Web palette is comprised of just 216 colors. That is, there are only 216 colors that can be safely viewed in a Web browser on both a PC and a Macintosh. While that sounds like a lot, when you consider that a design-variety computer can show you millions of colors, 216 starts to look pretty pid-

When you design a Web-destined graphic

in a color or colors that are outside of this Web-safe range, the offending colors will be dithered into the limited range of the palette. While this is actually a Good Thing, sometimes the pure-looking colors you wanted end up looking messy.

Enter Ditherbox. A teensy plug-in that you use through Photoshop or another graphics program that offers full Photoshop plug-in compatibility, Ditherbox actually

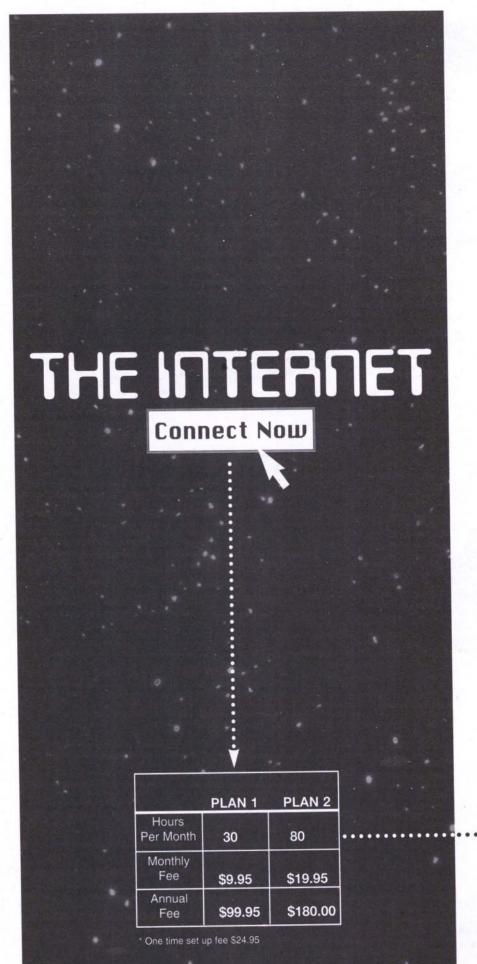
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FISTFUL OF GRAPHICS

extends the cross-platform palette by blending the available colors into a pattern that's safe to view. The upshot is, Ditherbox makes your color look like the one you specified in the first place.

WebPainter

Platforms: Macintosh, Windows 95/NT System requirements Macintosh: Power Macintosh or 68020 processor, Mac OS 7.0 or later, 8 MB RAM.

2 MB of hard disk space (minimum installation), color monitor, CD-ROM drive.

System requirements Windows: 486 DX/66 processor. Windows 95 or NT, 8 MB RAM, 2 MB of hard disk space (minimum installation), CD-ROM drive, SVGA

http://www.totallyhip.com

One of the very cool things about the GIF89A format is that it allows the display of multiple frame images. Read: animation. And while animation on a Web site can be a big, fat, annoying pain, it can also be very cool. Either way, animated GIFs are fun to create. WebPainter is one of the applications currently on the market that specialize in just that.

The name is slightly misleading: it's not a paint program, it's completely dedicated to creating GIF animations. However, that's the only thing about the program that's a little limiting. WebPainter performs as advertised: you can create Web animations from clip art or from scratch in very little time. The interface is straightforward, the price tag is low and the manual is comprehensive. Another nice aspect: WebPainter is made in Vancouver, making this an entirely Canadian product.

GifWizard

http://www.gifwizard.com

There may be lots of stuff around to help you make good Web graphics, but there is an almost equal number of cool online resources to help do this job-or to help do it better. One of these is GifWizard.

GifWizard isn't something you buy in a box. You actually use it online: no application to download or learn how to use.

How it works is you surf to the GifWizard site and plug in the URL of the file you wish to make smaller. GifWizard will travel there and check it out and then come back with several different versions of your GIF file, all smaller than the one you started out with. It's a very cool tool.

Cooler still-it's free!

DeBabelizer

Platforms: Macintosh, Windows 95/NT 4.0 or later System requirements PC: 486 or greater processor, 16 MB RAM, 20 MB available hard disk space for installation, 20 MB of hard disk space for operation. System requirements Macintosh: 68030 or greater processor or Power Mac, Mac OS 7.1 or later, 16 MB RAM, 25 MB available hard disk space. http://www.equilibrium.com



Don't be fooled by the simple interface. DeBabelizer puts serious power into your hands.

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Linda Richards' latest book, Web Graphics For Dummies, was recently published by IDG Books. She is presently at work on The Visual Quickstart Guide to DeBabelizer for Peachpit Press. Richards is also the author of Teach Yourself Photoshop 4.0 (MIS:Press) and The Canadian Business Guide to Using the Internet. She can be reached online at scribe@smarty-



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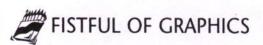
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Graphics tools offer more bang for less buck

BY EMRU TOWNSEND

the field of multimedia has changed significantly in the past few years. In particular, 1997 featured plummeting prices and an increased emphasis on the home user. What hasn't changed is the overall scheme of things: the graphics and multimedia tools remain fundamentally unchanged. They're just cheaper, faster, and more sophisticated.

Do you want software with that?

Almost all of the devices mentioned below come with some extra software enticements. "Lite" versions of OCR (optical character recognition software) packages come with most scanners, for instance. In fact, lite versions of all kinds of software come with these gadgets. Adobe PhotoDeluxe-which features a small percentage of Adobe Photoshop's features that 99 percent of the populace actually uses-seems to be bundled with everything these days. (I expect to find it in boxes of breakfast cereal soon.)

If you can't decide what to buy, what's included in the box can tip the balance. In some cases, if you're lucky, the software is in fact a full version. For that reason alone, it can be worth it to shop for hardware before looking at software.

There have always been two ways to get images into computers: create them yourself, or grab them from other media somehow.

Probably the most tedious way to create an image from scratch is with a mouse. In 18 years, I have met exactly two people who can draw with a mouse-and one of them was the type of person who could draw with anything-you know, like the people you hated in art class.

Graphics tablets

To most of us, the most natural way to draw is with a pencil or pen. Graphics tablets (also called digitizing tablets) have been around for a long time, but have only become inexpensive and useful in the last few years.

As the trend toward more "natural" computer imagery has picked up steam, pressuresensitive tablets have become the norm rather than the exception. As the name implies, a pressure-sensitive tablet can tell how hard



you're pressing the stylus against it. With the appropriate software (these days, most popular packages), drawn lines will appear with varying thickness or darkness depending on the pressure. Similarly, cordless and batteryfree styluses, which feel more natural to the user, are now the norm. One such device, the Wacom UltraPen, has the added feature of an "eraser" on one end of the stylus, to erase graphics or text.

Most graphics tablets can also double as a

mouse, for which some RSI (repetitive strain injury) sufferers are grateful. On the other hand, some people with RSIs find graphics tablets cause more pain over time. So if this is the case for you, you might want to hang on to that mouse.

If you've already done the drawing or taken a photo, then you probably want a flatbed scanner. Prices on flatbeds have dropped so drastically in the past few years, it's enough to make your head spin.

with an optical resolution of 300x300 dpi (dots per inch) cost around \$2,000, and the average computer store didn't stock them. Now you have to be careful not to trip over

Continued on page 56



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Pro 620 Color \$74.00 Monitor

I B	M	T	h i	n k	P	a d	
	Model	CPU	RAM	HDD	CD	Display	Price
	380D	150mm	nx 16MB	2.1GB	8X	12.1TFT	\$3,579
12 T	380ED	166mm	nx 16MB	2.1GB	20X	12.1DSTN	\$3,199
244	380ED	166mm	nx 16MB	3.0GB	20X	12.1TFT .	\$4,499
74.2	380ED	166mm	nx 16MB	5.0GB	20X	12.1TFT	\$4,999
	760XD	166mm	nx 32MB	3.0GB	8X	12.1TFT	\$5,699
SSECTION	. 765D	166mm	nx 32MB	3.0GB	8X	13.3TFT	\$6,199
	770	200mr	nx 32MB	3.2GB		13.3TFT	\$6,499
	770	233mr	nx 32MB	5.1GB		14.1TFT	\$9,199

	Model	CPU	RAM	HDD	CD	Display	Price
3 Sotellite Pre 140 xmg	300CT	133mmx	32MB	4.0GB	10X	10.4TFT	\$3,595
Money	440CDT	133mmx	16MB	1.35GB	10X	12.1TFT	\$3,100
	440CDX	133mmx	16MB	1.35GB	10X	12.1	\$2,499
	460CDT	166mmx	32MB	2.1GB	10X	12.1TFT	\$3,995
	460CDX	166mmx	32MB	2.1GB	10X	12.1	\$3,599
2, 10	480CDT	233mmx	32MB	4.0GB	10X	12.1	\$5,395
and and	530CDT	166mmx	32MB	2.1GB		12.1TFT	\$4,749
	750DVD	233mmx	64MB	5.1GB		13.3TFT	\$8,399

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Aretê Pentium II System P233MMX



- INTEL Pentium II P233MHz MMX Proc
- 64 MB SDRAM 512K Pipelined Cache Fujitsu 1.44MB 3.5" FD
- Fujitsu 3.2 GB HD (10m/s) Acer 24xCD-ROM
- Acer FX-3D 16 bit PNP Sound Card ATI 3D Xpression w/4MB SGRAM RAM US Robotics 33.6 Fax/Modem/Voice Acer Accufeel 104 Win 95 Keyboard
- Logitech 3 Button Mouse Windows 95 & Plus CD SR2 HITACHI Works for Windows 95
 - 17" Hitachi Pro 620 Color Monito 60 Watts Speakers Mid Tower ATX Case
 - Warranty 2 Years Parts & Labou

\$114.00

\$3,489

\$2,995

Aretê Pentium II System P266MMX



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 64 MB SDRAM
 512K Pipelined Cache
 Fujitsu 1.44MB 3.5" FD
 Fujitsu 3.2 GB HD (10m/s)
 Acer 24xCD-ROM
 Acer FX-3D 16 bit PNP Sound Card
 ATI 3D Xpression w/4MB SGRAM RAM
 US Robotics 33.6 Fax/Modem/Voice
 Acer Acufeel 104 Win 95 Keyboard
- Acer Accufeel 104 Win 95 Keyboard With 17
- Logitech 3 Button Mouse Windows 95 & Plus CD SR2 Works for Windows 95 17" Philips 107B Color Monitor 107B
 - (.24dpi) w/ Built-in Speakers Mid Tower ATX Case Warranty 2 Years Parts & Labour



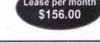
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Color

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- Matrox Mystique w/4MB SGRAM
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- 6.4GB Ultra/33 UIDE
- · 1.44MB Floppy
- 32x EIDE CD-ROM
- · Creative SB AWE64 w/Subwoofer
- 56k int. voice fax modem
 Millennum-II 4MB AGP /MPEG
- 17" ATX Case with 230W Fujitsu 104 Windows 95 keyboard
- · MicroSoft mouse w / pad
- · Two Years parts and labor warranty

NEC A500/E500.

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MS WIndows'95 full ver. on CD+\$120
MS Encarta'98 Home kit +\$80

Canon BJC 4300C Printer .. +\$255 15"/17" .28 SVGA 1280x ViewSonic G771/ G773..... +\$250/460 +\$630/670 ViewSonic P775/PT775 +\$800/920

for Intel PII MMX-233

Blank CD \$2.5 Sony cd-r \$3.5

24x CD-ROM 595

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Intel P5MMX166/200....\$995/1060 Intel P5MMX 233mhz.....\$1160 AMD K6MMX166/200..\$980/1050 AMD K6MMX 233mhz......\$1120 Cyrix 6xMX166/200.....\$960/1030

Intel 430TX chipset, 512k PBC SDRAM-DIMM 32MB 10ns 168p UltraIDE 3.2GB Ultra-IDE 33/DMA PCI 3D 2MB SVGA w/MPEG 1.44 Fujitsu floppy 15" SVGA color 1280x1024 .28 13" Hilevel tower case w/ 230 power 104 win95 KB and Mouse and pad

· Novell Users 5 / 10.

Novell Users 25/50....

• MS SNA v.3.0 w/5 users...

UPSSmart 450/700/1000...

· SurgeArrest Pro 7/ w-tel ... · SurgeArrest Net 7/ w-tel .

SurgeArrest Person 7/ w-tel ...

NT 4.0 client access license/each.......\$45

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• UPS 600/900/1250.....\$280/450/620 UPSPro280/420/650/1000.\$200/330/400/520

UPSSmart 1400/2200/3000..\$820/1420/2290

• NT 4.0 Server 5 /10 ..

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(Creative SB16/64	+\$50/100
(Creative 33.6K/56k Voice	+\$65/10:
(USR Spt 33.6 / 56K Voice	+\$120/160
(Ultra-IDE: 4.3G/6.4G/8.0G	+\$40/150/25
(17" SVGA 1280/ 15GS	+\$240/18
(Optiquest V773/V775	+\$380/440
(Viewsonic G771/G773/P775	+\$420/440/56
(Stereo speaker w.ac 80W/160W.	+\$15/4

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ATX, Intel 430TX chipset, 512k PBC SDRAM-DIMM 32MB 10ns 168pin UltraIDE 4.3GB Ultra-IDE 33/DMA Mystique 220 3D 4MB PCI w/MPEG 1.44 Fujitsu floppy NEC A500 / Sony100ES 15" SVGA 17" Hilevel ATX tower case w/ 230 power Fujitsu 104 win95 KB and Logitech Mouse

Optional:	
(24x /32x cd-rom eide	+\$95/115
(Creative SB16/64	+\$50/100
(Creative 33.6K/56k Voice	+\$65/10
(USR Spt 33.6 / 56K Voice	+\$120/160
(Ultra-IDE: 4.3G/6.4G/8.0G	+\$40/150/250
(NEC E500/A700/E700	+\$80/320/440
(Optiquest V773/V775/V95	+\$200/280/1050
(Viewsonic G771/G773/P775	+\$220/260/380
(Altec ACS45 /55 Speakers&Su	bwoofer+\$110/20

Pentium-II Systems

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Intel P6-180/200mhz...\$1150/1500

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Intel CPU PII-233/266.....\$420/585

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• cabling tools	/10	(Kabotics)	AMD
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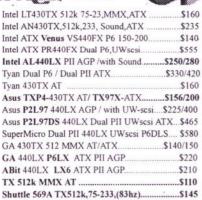
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Sound

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SoundBlaster 16/Awe64	\$53/100
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PCI sound card	\$60

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USR BigPicture kit	\$499
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ECC DIMM 32 / 64M	\$110 /280
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RAMs for Notebooks	available
RAMs for printers	available

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NEC A500/M500/E500	\$425/510/495
NEC A700/E700/M700	\$730/890/970
NEC P750 17" / P1150 21".25	\$1050/2080
Sony 100ES/GS/PS.(15")	\$450/520/580
Sony 200ES/GS/PS.(17")	.\$760/920/1100
Sony 400PS (19")/ 500PS (21"	")\$1550/2350
ADI 4P(15") /5P(17") / 5P+	\$350/585/620
ADI 6P(20")	\$1050
ADI 6P(20") Sumsang 500B/700P	\$460/930
ViewSonic15GS/G771/G773	
Optiquest V773/V775	\$595/690
Viewsonic GT775/P775/PT77:	5\$810/800/940
V95/ G790 (19")	
Viewsonic PT810/P815	\$1750/1800
Optiquest V773/V775	\$635/730
Mitsubishi 87TX 17" /91TX 2	1"\$1020/1960

PRINTERS

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PACKARD	
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HP 890C/1000C	\$560/650
HP 6L / 6P /6MP	\$515/950/1240
HP 4000 /4000N /4000NT.	\$1470/1870/2090
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HP 4V /5Si	\$2370/3490
HP Color Plotter your sale	e centre in Vancouver
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Stylus 400 (720dpi, WIn only).	\$270
Stylus 600 / 800 (1440dpi)	\$340/47
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Brother

Brother HL730DX / 760DX	\$390/490
Brother HL730DX+ / 760DX+	\$430/530
Brother HL1060/1660	\$750/1320
Brother MFC 4550/MFC 6550	\$1320/1130
Brother toner TN100 / TN200	\$30

Lexmark

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Lexmark	Optra	S1250	1250N	\$1390/1850
Lexmark	Optra	S1620	1620N	\$1370/1800
Lexmark	Optra	S1650	1650N	\$1590/2050
Lexmark	Optra	S2420	2420N	\$2760/3260

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FISTFUL OF GRAPHICS

Graphics tools offer more bang

Continued from page 53

the 30-bit, 600x1200 dpi scanners selling for a bit over \$300.

Scanners are largely being marketed as a means of creating a digital photo album, or for scanning documents. If desk space is at a premium—flatbeds take up as much room as a small VCR-then consider a document scanner or a photo scanner.

Document scanners can deal with anything up to about 8.5 inches wide. Anything, that is, that can fit into the slot (if it's a book cover, forget it). Most photo scanners work on the same principle, except they have a smaller aperture for feeding in pictures. Although these scanners tend to be more intuitive (put in the paper or photo and it does the rest), flatbeds offer more flexibility in source media and software. It might be better in the long

run to just clear some space off your desk.

Digital cameras

So many filmless cameras have sprung up in the last year it's impossible to keep track of them all. Prices vary wildly, but there's a lot available in the under-\$1,500 range.

The available resolutions on these models still aren't quite up to par with film (even 1,024x768 is only halfway to 16mm), but these are more than adequate for Web pages, other on-screen work, or proofing. You can get away with print at lower resolutions if the image is small enough, or if you don't mind a certain lack of detail.

(The hand clutching the graphics tools on this month's cover was taken with a Kodak DC-210 "megapixel" camera. The picture lacked the detail and was too soft to be used as a straight photographic image, so effects were added to give it a more painterly appearance. We were generally impressed with how far digital cameras have come in a year. However, if you're working on glossy publications, you won't want to give up your traditional photographic tools just yet. —Ed)

The digital camera market can be clearly defined in two groups, similar to "real" cameras. Some cameras emphasize point-andshoot simplicity, with automatic focus and automatic exposure, but the really interesting activity is with the cameras that incorporate more traditional features such as optical zoom, additional lenses, tripod mounts, and manual features. Some even go a step beyond and incorporate moving video and audio fea-

Perhaps the most frustrating thing about digital cameras is the lack of standards. Unlike traditional cameras, where you only have to get the size of the film right, digital cameras store images in a variety of formats on a variety of media. Some cameras use Flash cards, while others use SmartMedia cards, some use PCMCIA cards, and others store images internally. Pictures are transferred to the computer by means of serial, parallel, PC Card, USB (universal serial bus), or FireWire connections depending on the camera, and what your computer is equipped with. The most convenient cameras of the lot are the Sony Digital Mavica models, which store IPEG



images on PCformat 3.5-inch floppy diskettes; unfortunately, the cameras only support a resolution of 640x480. the minimum for good images.

Frame grabbers

When the Snappy frame grabber appeared a few years ago, it was a marvel: smaller than a VCR's remote control, it plugged into any PC's parallel port and had easy-to-use software for grabbing images from VCRs, video cameras, or any other composite video source. The price has since plummeted from \$400 to about \$150, and other products have appeared on the scene to capitalize on the market the Snappy opened up.

Many of these devices sport easy-to-use interfaces and can acquire images at up to 1,600x1,200 (more or less) in 24-bit color, freeing you to pick and choose based on what features you need: S-Video input and output, video capture (i.e., moving images), or audio.

Just do it

It's tempting to wait for the new device that's just around the corner; the one that promises to digitize live video and audio while brewing your coffee. The truth is, there's always something right around the corner. Figure out what you need and get it. By the time you've mastered it, a new generation of equipment will be there to enjoy.

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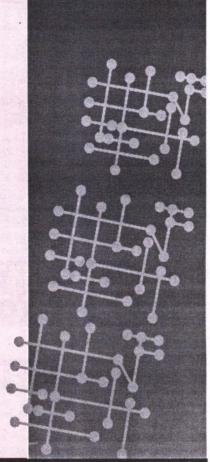
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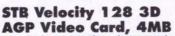
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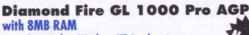
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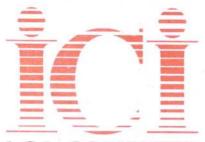
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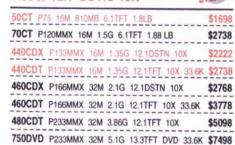
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Claris offers speedy, compact email client

BY PETER MILBURN

Tor the majority of computer users plugged into the Internet, email is quickly becoming the preferred medium of communication. So it isn't surprising that my email traffic has grown from a trickle to a torrent in the last couple of years.

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From: Claris

416-941-9611

http://www.claris.com

System requirements: 68020 or higher or PowerPC Macintosh, System 7.1 or later, 3 MB available RAM, 9 MB hard disk space.

Suggested retail price: \$99

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As a consequence, it hasn't taken long for me to outgrow the rudimentary features of the mail browser that's part of Netscape Navigator 3.0. Simply put, Navigator mail does not possess the management capabilities required by serious email users. (Sorry, but I won't use Netscape Communicator 4.0. It's cumbersome, slow and contains features I don't need).

Enter the dedicated email client software package. The demand for email client software has almost become as hot as the demand for Web site design software. There are now several choices on the market that include Claris Emailer, Qualcomm Eudora Pro and CE Software QuickMail Pro. Emailer's slogan claims that I can "control my email like a god," so I decided to put that claim to the test.

A new look

The biggest change that will be noticed by users of Emailer 1.0 is a completely revamped user interface. Claris is taking a cue from Adobe by implementing a matching look-andfeel across its product line.

Emailer now has a striking visual similarity to Claris Organizer. A floating button palette at the top of your screen allows you to quickly access commonly used features, such as creating mail, replying, forwarding, accessing your address book, printing, and more.

Another welcome change is support for hierarchical folders. In the left pane of the mail browser window you can create new folders or nest folders within other folders to suit your organizational needs.

Unfortunately, you can't drag-and-drop a folder into another. Instead, you must use an awkward folder menu. However, you can drag-and-drop any mail file into a folder. To display the contents of a folder you merely click on it, and the right pane of the browser window will display its mail content.

For some odd reason Claris decided to dispense with the browser window gridlines that were present in version 1.0. Hopefully, the next version will give these windows the same appearance as Mac OS 8 windows, since it makes it easier to follow the multiple rows of

A feature I find indispensable with Emailer is the ability to search your entire set (or subset) of messages using a find command. Emailer now consolidates all your messages internally into a single file rather than multiple files as in version 1.0. This has two advantages: faster searches and conservation of hard

> disk space. Also a standard feature is the ability to spell check your email. If you use other Claris applications, you'll be glad to know Emailer shares the same Claris spelling dictionary which resides in your System

> As you would expect, Emailer's address book supports single contacts or groups of contacts. However, its ability to addresses from import Navigator's HTML address file is compromised. Importing only works with tab-delimited text files, so you'll manually have to strip out extraneous HTML cod-

ing, then put in your own tabs. This is disconcerting to novice users and annoying to experienced users, so Claris should try to rectify this oversight in a future release.

A unique feature, however, is the support of two dozen non-Internet email services such as AOL, MCI Mail and RadioMail, to name a few. It also supports the ability to have multiple email accounts. When you couple these features with its ability to schedule emails and specify encodings for mail enclosures (BinHex, Base 64, UUEncode), Emailer more than meets the needs of the average user.

Advanced features

Emailer really shines by implementing sophisticated internal routines called mail actionsa fancy name for macros.

Through the mail actions dialog box, a user can define a series of instructions that automate long or repetitive tasks. Actions are also capable of triggering multiple actions, making the process of error-checking amenable to rocket scientists.

Examples of simple mail actions would be automatically filing incoming mail or automatically replying to an email message when you are away on vacation (assuming, of course, that you have a dedicated Internet connection and you leave your computer on).

Mail actions are further supplemented by the support of AppleScript, Apple's systemwide scripting technology that is part of the Mac OS. Mail actions can trigger an AppleScript routine that further amplifies the capabilities of the software. Emailer comes bundled with several pre-built AppleScripts, one of which will make your Mac read out

your unread mail. AppleScripts can also be run independently of mail actions.

Last but not least, Emailer can be used to set up an Internet list server from within the application, a boon to Web site hosts.

The bottom line

Emailer comes pretty close to its claim of "controlling your email like a god," but it still has a few minor rough edges that need smoothing over. Foremost is the lack of dragand-drop support for folders in the mail browser window.

At some point in the future I would like to see tighter integration of Emailer with the Desktop. It would be nice to be able to store messages in folders that are part of the Mac Importing address books from other mail programs should be made more painless. Claris should also add easier error-checking and auditing methods for its rules-based mail

But these complaints are relatively minor compared to the overall utility that Emailer offers. Claris has provided a lean, compact and fast email client that significantly enhances productivity. If you are in dire need of greater control over your email traffic, then Emailer is a terrific value that is worth looking

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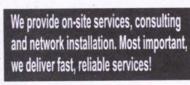
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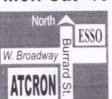
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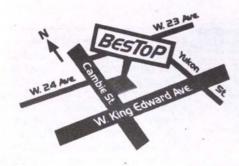
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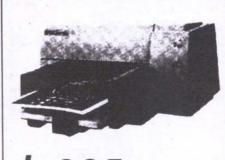
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Business briefs

Davis unveils accounting software for small businesses

MAPLE RIDGE, B.C. (NB)-Davis Business Systems Ltd., has announced BS1 Small Business, Windows 95, and NT accounting software for small- to mediumsized companies.

The software has multi-currency features and can handle Canadian and foreign taxes, company officials said. It can also handle multiple companies and is Year-2000 compliant. A single user license is US\$99, and network versions are US\$385 for three users or US\$750 for six.

Contact: Davis http://www.dbsonline.com

Corel adds speech recognition to legal suite

OTTAWA (NB)-Corel Corp. has signed a deal with Dragon Systems to bundle Dragon's NaturallySpeaking speech-recogsoftware with the WordPerfect Suite Legal Edition. Later, Corel plans to integrate the speech-recognition technology into the standard edition of

NaturallySpeaking, which recognizes continuous speech, will be sold as part of the WordPerfect suite for legal offices. Carrie Bendsza, a spokeswoman for Corel, said her company will sell the suite with NaturallySpeaking included; at the moment there are no plans for Dragon Systems to sell the suite, but some details of the arrangement are still to be worked out, she said.

Corel chose to bundle NaturallySpeaking with the legal edition of the WordPerfect suite first because legal offices show the greatest demand for speech recognition, Bendsza said.

Contact: Corel http://www.corel.com Dragon Systems http://www.dragonsys.com

and http://www.naturalspeech.com

Electric Mail links notes to the Internet

VANCOUVER (NB)-The Electric Mail Co., a maker of messaging software, has announced Notes Inter-Connect, which lets Lotus Development Notes users send and receive email and replicate Notes and Domino database updates to a central Notes server via the Internet. Notes Inter-Connect is an extension of Electric Mail's local area network

Continued on page 80

Building your business

in the wired world

BY JEFF EVANS

Ah, to be your own boss. To work hard and enjoy the fruits of your labors; to set your own schedule; to make your own decisions. How realistic is it, to start up a small business and make it a success?

ccording to Microsoft Canada, there are about a million small businesses in Canada, ranging from individuals working out of their homes, to middling operations with up to several dozen employees. As larger corporations and government institutions have slashed their own work forces in the "downsizing" mania of the last decade (brought about in part, alas, by computer technology), we have increasingly had to look to ourselves, rather than our elected and appointed rulers or Canada's equestrian class, for new jobs.

In fact, small business has become the major creator of new jobs in Canada. Much of this flourishing of small scale entrepreneurial enterprise has been made possible by personal computers, and increasingly, by inexpensive, small scale networking technology and the Internet.

Computer product developers are aware of the flourishing small business sector, and of its hunger

for technology that gives the small business person more "bang for the buck." A vast array of new computer and telecom products and services are now available for the small business sector. How can you exploit the opportunities that information technology offers to succeed at your own business?

My beautiful digital office Personal computers began to be

almost as soon as they appeared in the mid to late 1970s. Initially, PCs were glorified electric typewriters that didn't need correction fluid, but with the development of rudimentary spreadsheet, database and telecom software, they soon became much more.

Computers rapidly developed the ability to enable even a single Continued on page 70



The sweet, short history of MGI Software

BY CHUCK GALLOZZI

Like a butterfly freshly emerged from its chrysalis and drying its wings in the sun, MGI Software Corp. appears poised to transform itself into a global leader in PC photography and video editing. In just two years, 40 million copies of its PhotoSuite have been distributed worldwide. TCP contributor, Chuck Gallozzi recently talked with Anthony DeCristofaro, president and chief executive officer of MGI.

CG: Anthony, what does MGI stand for? AD: Actually, nothing. It's just a corporate name, with a ring to it, such as MGM. However, we often say that it stands for Mighty Good Investment. [MGI is publicly traded on the Toronto Stock Exchange.] Oren Asher, our chairman, had the name trademarked around the world and set it aside for some future opportunity.

CG: How was the company started? AD: Oren and I started the company. I've known him nearly 15 years. One day, while showing me his CAD [computer aided design] program, he flipped through an imageediting program that excited me. He couldn't understand my excitement, for he considered it just a rudimentary program designed for in-house use. However, I knew the image-editing segment of the market was at a position where it could explode, so I told him that I would use his program to raise money and start the company.

Because of our previous track records, I was able to find supporters. With the financial backing in place, I brought in a talented team. Because of the acquisition of Delrina by Symantec, we were able to get great people from Delrina. We also signed up two individuals from Corel, one to handle Europe and the other to handle North America. Our focus was global right away. We understood the opportunity of PC photography in the marketplace.

We were in a niche market where we wanted to be because opportunity should be entered in a niche to take a leadership position and grow with it. That's the strategy.



More importantly, the basic strategy was critical mass OEM [original equipment manufacturer], while building in parallel a strong retail channel.

We also heavily invested in R&D, at a much higher ratio than most companies. About 60 percent of our staff works in that area. That will change over time as we leverage ourselves and produce more and

Continued on page 73

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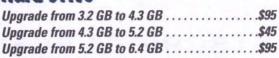
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Small Business Computing

Basic resources checklist

Continued from page 67

person to operate a professional-looking business much more productively than with older paper-based office technology. Mail merge, faxing, lead tracking and desktop publishing features allowed a degree of automation and professional sales and marketing power that helped thousands of small businesses flourish.

However, it was really only with the rise of the Internet that the potential of the computer to facilitate new business development truly began to be realized. The standalone computer mainly replaced old-style office tools. The connected computer changes the way in which business people can interact with their clients and suppliers. It literally opens up a world market to even the smallest business.

The connected company

Last issue we talked about "convergence," the coming together of traditional and new media in an increasingly standardized digital format. There is a kind of convergence happening in business, as well, as the human relationships and electronic- and paper-based business technologies of the past are going digital, and going online.

This convergence of business onto the networked computer is changing the nature of work, of employer/employee relationships, and of society itself. The networked computer tools that used to be the domain only of the largest corporations, using expensive mainframe computers, have come down to the level of the desktop PC.

Getting started in the New Economy

The New Economy is a term that applies to the new categories of business that technology has created: software and hardware development and sales, online services, international financial services, technology education, training services and the like.

However, with the spread of the World Wide Web as the universal networking technology, the phrase New Economy is also coming to apply to the general practice of business using networked computers.

At their most extreme, networked computers can be used for all the elements of a business transaction (such as a consumer surfing a Web-based catalog, making the selection, paying for the item, and arranging its shipment without any face-to-face contact with the vendor). However, only a minority of potential customers are currently online at all, and only an even smaller minority of "early adopters" are accustomed to doing business online.

Networked computer technology can be used, and is being used, in gathering information about potential clients, targeting the most likely prospects, and efficiently automating marketing and selling efforts. As well, networked computers can be used to establish and conduct business with corporate suppliers, partners, government and regulatory agencies.

To put it simply, the ability to use computers to help understand who your best potential customers are, to tailor your offerings to their needs, to improve customer service and satisfaction, and to identify the opportunities for future growth will give any businesses its best possible chance to succeed

The (temporarily) level playing field

At the small-business level, the increase in the power of business PCs, the development of easy-to-use networking solutions, and the development of business on the Web are all recent events. There are, by definition, few veterans or experts in the use of brand new technology. This means the barriers to entry for new businesses in the New Economy are lower than for more established parts of the economy.

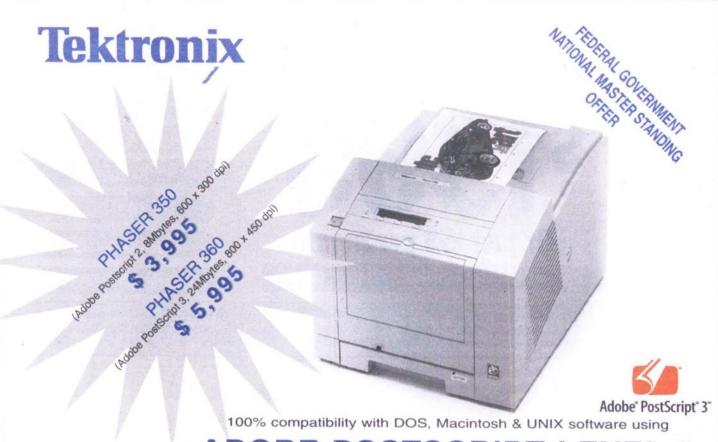
Anyone who is willing to learn and take risks potentially has as much chance of success in a new market as anyone else. This also means opportunities for groups traditionally under represented in mainstream business: women, ethnic minorities, recent immigrants, the young, and persons with disabilities.

The worst boss in the world

Many people are attracted to the prospect of building a small business in order to be their own bosses, in their own companies. I have met highly qualified computer professionals who left well-paying jobs in Fortune 500 companies to set up Web-based services for example, attracted as much by the opportunity to stop wearing a suit as to make money.

In fact, small business owners often find they work harder and take on far more risks

Continued on page 74



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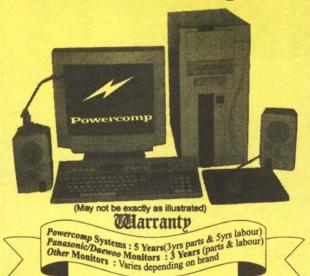








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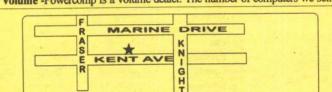
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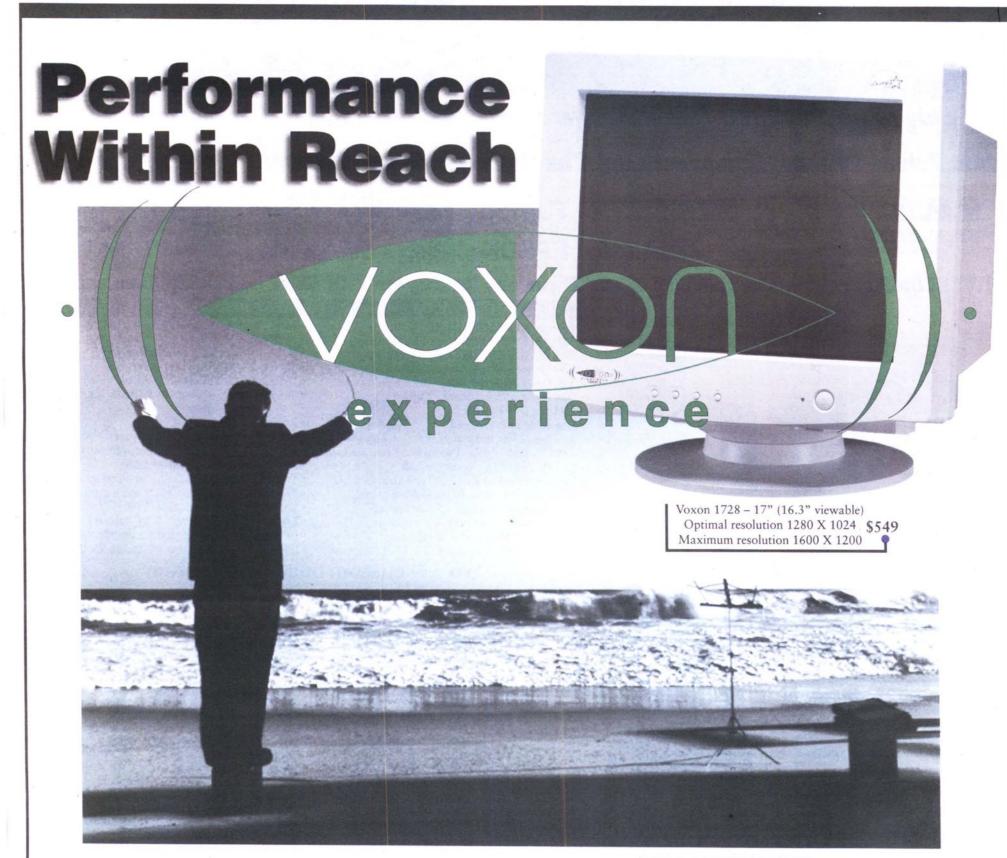
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Voxon 2031 – 20" (18.8" viewable) Optimal resolution 1280 X 1024 Maximum resolution 1600 X 1200



Optimal resolution 1024 X 768 Maximum resolution 1280 X 1024

Model	Voxon - 1428	Voxon - 1528	Voxon - 1728	Voxon - 2031
Туре	14"conventional	15" flat screen	17" flat screen	20" flat screen
Viewable	13.2"	14.1"	16.3"	18.8"
Dot pltch(mm)	0.28	0.28	0.28	0.31
CRT	Samsung/LG	Samsung/LG	Samsung/LG	Hitachi/Toshiba
Resolution	1024 X 768	1280 X 1024	1280 X 1024	1280 X 1024
Control	Analogue	Digital	Digital on-screen	Digital on-screen
Warranty	3 years (ltd.)	3 years (ltd.)	3 years (ltd.)	3 years (ltd.)





The history of MGI Software

Continued from page 67

more products for the worldwide market.

Finally, an important part of our strategy was to get involved with video because we believe that photography and video are going to overlap. That is, still images from video will be brought into photos and vice versa. So, shortly after our introduction of our PhotoSuite, we introduced our video editing program, VideoWave.

CG: I agree with Oren that the product you started with was so basic that it was unimpressive. Wasn't leveraging it into the most widely used imaging software a magical feat? Perhaps the "M" of MGI stands for magic.

AD: The magic was a product, a dream, a market to go after, and a team of talented people to make it all happen. Yes, we had marketing savvy, but most important, we had the passion to focus on PC photography while everyone else was involved with the peripherals. They did not understand the evolution taking place, a new emerging market of the digital revolution.

CG: Do you believe MGI is another example of the important role played by Canada in software

AD: Well, we no longer can say we are 100 percent Canadian because of the Intel investment and our partnership with Mitsui Japan, the second largest company in the world. As far as our role representing Canada, we are indebted to Delrina and Corel for gaining entry into the international marketplace and making the road less difficult for others to follow.

CG: What about the role of Japan?

AD: The revolution of digital video cameras, digital still cameras, the consumption, and the export are all sitting in Japan. They are the leaders of the hardware technology that is fueling the marketplace. So, we are there, front and centre, working with them. Our philosophy is to build a product around a strategy of the industry and align ourselves with players that make it difficult for others to enter.

CG: Tell me more about the PC photography mar-

AD: We have multibillion dollar companies driving the marketplace—digital camera and scanner manufacturers, for example. There is also the role of the Internet. Photos, email and communicating are bringing the digital world together in new ways. Film manufacturers and retailers are also playing a major part. Onehour digital service is now available. You can get a second set of prints free or get them on a floppy disk. This service will appear in 2,000 outlets across the United States, and we'll see something similar in Canada at a later date.

All of a sudden people will need image editors to edit their pictures and share them on the Internet. According to Dataquest, the PC photography area will grow to \$228 million by 2001. It was \$17 million the first year. Since we took about 30 percent of the market share, it is a very exciting position to be in relative to where it's going to be in three years. Moreover, we're aligned with all the key players.

CG: You mentioned that Intel invested in your company. What role are they playing in the digital revolution?

AD: The Intel PC 98 camera standard is another major force starting to form. They will supply a small motherboard with four chipsets that will do much of the work previously done by digital cameras. This will make possible \$199 high-resolution digital cameras, further fueling an already rapidly expanding

The technological revolution also has an impact upon video. We believe with the new motherboards, Windows 98, and our VideoWave product, it will be possible to do real-time video editing in 1999. Another important role of Intel is their advertising. They are investing more than \$500 million to bring visual computing to the forefront. In Europe, for example, they are running ads with our product, preparing the way for an introduction of this new technology.

CG: Your focus will remain on PC photography and video editing?

AD: There is another ingredient that we are already working on in the background; 3D modeling. Video and imaging editors will naturally want to add 3D text and special effects to their creations. So, in the future we will launch a program to help them do this.

CG: The MGI PhotoSuite II that you showed at Comdex created a stir.

AD: Yes, it is the world's first browser imbedded application. We have wrapped the program around the Web. With drag-and-drop simplicity, users will be able to move images from the PhotoSuite directly to Web pages. When visiting our Web site, they will be upgrading to the latest version of the PhotoSuite without realizing it. They will also be able to communicate with us and buy new modules to further expand the capabilities of the suite. PhotoSuite II is due to appear this spring.

CG: Can you tell us how long you think you can maintain your huge rate of growth and to what vou owe your success?

AD: We are just in the infancy of this market, so we can easily maintain our growth for the next three to five years. As far as our success, we owe that to technology, our strategic alliances, and our staff.

Contact

MGI Software Corp. 40 West Wilmot St., Richmond Hill, ON, L4B 1H8 Tel: 905-764-7000 www.mgisoft.com

MGI fact sheet

Chairman and director: Oren Asher, formerly president (now chairman) of Ditek Software Corp., a graphics software development company he founded in 1985 that specializes in computer-aided design and drafting (CADD).

President, chief executive officer and director: Anthony DeCristofaro, formerly vice-president and general manager of AST Canada, and general manager of NEC Canada before that.

Products

MGI PhotoSuite (plus spin-off products based on PhotoSuite; e.g., Sports Cards, Wedding Kit) MGI VideoWave

MGI 3DVision MGI Calamus Publisher

Corporate

Founded: September 1995 Employees (as of October 1997): 115 TSE stock symbol: MGI Head office: Richmond Hill, Ont.

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Basic resources checklist

Continued from page 70

and responsibilities than when they were employees. There are no legal restrictions on how hard you can force yourself to work in your own business, but at times a small business owner has to pause to realize, to his or her shock, that employment laws do apply to one's own employees.

The toolkit

Microsoft, unsurprisingly (or perhaps not), has become the major player in extending the capability of the PC in business. In addition to its traditional Office suite of applications, which has gained a near monopoly in the business market, Microsoft has developed a powerful but simple to use server solution, the MS BackOffice Small Office Server. According to Microsoft, this product allows small enterprises without in-house information technology (IT) professionals to get up and running with sophisticated network and telecom capabilities at a low price.

IBM has also started a small business division that offers free consulting via the Web. IBM has recognized that one of the most active and successful categories of New

Economy entrepreneurs are women, and has a special online consulting section for womenowned small businesses.

Powerful marketing and selling tools are migrating down from the mainframe/enterprise field to the small business PC server field with astonishing speed. This means virtually any size of company can employ "loyalty management" and automated marketing tools to radically extend their reach into the market at ever lower costs.

Do it yourself, or outsource?

One way to avoid the learning curve of setting up in-house networking and Web facilities is to make use of outside service providers. For example, Stentor, the Canada-wide alliance of regional telecommunications companies now offers a coast to coast HyperStream Switched Access system to enable business clients remote access to high-speed networks. This allows a business with two or more sites (or networked connection to key clients or suppliers) to rent a secure virtual network without having to buy and maintain it themselves.

As is discussed below, however, small businesses should be careful about outsourcing. It's convenient, but it's also expensive, and if it becomes a substitute for developing inhouse expertise in the business's core activities, the small businessperson may find convenience to be a trap.

Get along li'l customers

One of the critical developments in business technology in the last five years is the rapid spread of data warehousing and data mining technology to the mid- and small-scale enterprise. Software that is designed to automate 'customer management" has moved to the Windows NT server and even to the "personal-workstation" level.

For example, Onyx Software, a global leader in customer management solutions, claims Canadian businesses are flocking to its MS BackOffice compatible customer management products. The company notes: "Canadian companies are really grasping the value of total customer management. In using ONYX Customer Centre, these companies will receive rapid value from its unique, closed-loop solution for marketing, sales and customer service."

In traditional business practice, a smart businessperson gets to know his or her customers, to better meet their needs and sell effectively to them. Customer management software typically allows vast amounts of customer information, sometimes purchased from data collection services run by large corporations (the U.S. Post Office is a famous source of information on the habits of the people who use its service) to be analyzed, to coordinate marketing efforts to the most like-

So, for instance, a real estate firm can identify neighborhoods and individuals to concentrate efforts aimed at encouraging house sales.

How to succeed

In a recent study of 488 chief information officers in North American corporations, the Deloitte & Touche consulting company analyzed the principal elements of success in implementing business computing solutions. Several characteristics of successful implementation of technology were noted, and summarized as simple rules:

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SYSTEM D

PENTIUM 233 MMX SYSTEM INTEL PENTIUM MMX CPU ASUS TX97 MOTHER BOARD 512 KB PIPELINED CACHE 32 MB SD BAM 1.44 MB FDD

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Basic resources checklist

Continued from page 74

Keep it simple: "Employ a minimal number of technologies and platforms to rein in costly redundancies... avoid investing in 'faddish' technologies."

Buy, don't build: "For 'back office,' admin-

take custom development."

Teach them well: Low-spending, successful companies "allocate almost twice as much of their budget to training [as the average]."

Outsourcing is not a silver bullet: "In every category, high-spending companies outsource a higher percentage of their IT func-

receive the benefits they expected." In other words, learn how to use your key business computing tools yourself, rather than relying on outside companies.

The plan

Building a successful small business involves some common principles whether it is employing New Economy technology or not.

The basic steps are:

- Understand the potential market: Who are your customers, and what products or services do they want? Computers can be employed to locate customers via resources such as online or CD-ROM business directories, trade shows, and telemarketing.
- Define what services or goods you propose to supply: In the New Economy, "services" can include consulting, education, entertainment, and increasingly, Web services, such as design and maintenance of Web sites, hosting of Web sites on servers, and buying and selling online using electronic commerce software.
- Automate your sales efforts: Leads can be collected and tracked, at the simplest level, using contact management software, such Symantec Act!, Janna Contact, Maximizer or Goldmine. Databases, such as MS Access or Claris File Maker Pro, can provide somewhat more power. At a more sophisticated level, data mining and customer management software can be used.
- Use the most appropriate marketing methods: Including your own Web sites. If many of your potential customers have Web access, it may be possible to enhance your business via a presence on the Web. A disproportionate number of the ideal demographic groups-well educated, affluent, 18-45 year olds-have access to the Web, and in 1997 this group began to increase its direct purchasing on the Web at an exponential rate.

However, an effective Web site itself has to be marketed. A site has to be easily findable via search engines such as Alta Vista, and effectively promoted by locating "banner ads" for your site on other, related Web sites.

As well, when a potential customer does find your site, it should be easy to use, appealing, and constantly changing to encourage surfers to return regularly. It should be set up to capture information on those who visit it (preferably with the visitor's consent), and it should be organized to encourage online purchasing, or some other interaction with the customer that can lead to a future sale (for example, filling out a contest or a mailing list).

A new business bookshelf

The marketplace series of books from Coriolis is designed to outline the opportunities in the new media industries for those who would like to get an edge in rapidly growing fields, such as Web or games development. Each title in the series comes with a CD-ROM that includes a searchable database of industry contacts.

The eternal truth

No amount of new technology will make up for a lack of basic business sense. A successful business is a positive social and economic relationship between human beings, where both vendor and buyer benefit from the transaction. If you understand your customers and value their satisfaction, then technology may help you to succeed. If you neglect this basic requirement, then all the technology in the world is not likely to be of much use. \Box

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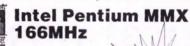
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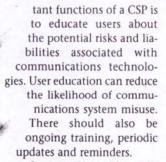
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Businesses need communications system policies

Part II: creating a communications system policy



• System Use: The CSP should prescribe system-use rules. Such rules may be restrictive (businessonly use), liberal (unrestricted use subject to stipulated prohibitions and non-interference with job performance), or something in between.

Policies that permit business-only uses may reduce certain risks, but they may be difficult to enforce and may have a negative impact on user productivity and workplace relations. At the very least, the CSP should require system use to be lawful and consistent with the organization's general reputation, standards and other workplace conduct rules and productivity expectations.

The CSP might also prohibit specific uses, such as (a) illegal, unethical or immoral uses; (b) sending, receiving or accessing offensive, objectionable, abusive, pornographic, obscene, sexist, racist, harassing or provocative messages, images or other materials, including adult-oriented Web sites or newsgroups; (c) defamatory, derogatory or false messages; (d) political activities; (e) other commercial or business uses; (f) unauthorized access to other users' email, data or communications; (g) uses that infringe copyright or other intellectual property rights; (h) unsecured disclosure of confidential or privileged information; (i) unauthorized use of data encryption; and (j) uses that may compromise system integrity or degrade system perfor-

In addition, it may be appropriate to stipulate email content and etiquette protocols. For example, requiring receipt confirmation for important email, restricting the use of "All Users" email, or requiring authentication of business-related email and disclaimers on non-business email. The problem, however, is that rigid procedures can so encumber email use as to reduce or possibly eliminate its benefits as a productivity tool.

· Monitoring, use and disclosure: Organizations may have legitimate reasons for moniforing and disclosing communications system use and data, and may be required to do so by law. However, unauthorized use or disclosure of private communications, including email and computer files, may violate users' privacy rights, constitute a breach of employment agreements, or give rise to civil or criminal liability.

users that there is no privacy regarding communications system uses and data, including email and vmail (voice mail), and to establish proper procedures for the monitoring, use and disclosure of communications system use and data. For these reasons, it may be appropriate for a CSP to contain a number of non-privacy warnings. For example:

(a) the communications system and its data are the organization's property, and the organization reserves the right, at its sole discretion and without any further notice, to intercept, retrieve, access, review, archive, destroy, and disclose to others (including courts and law enforcement authorities) all communications system data and uses, including email, vmail, and Internet use;

(b) use of the communications system constitutes an irrevocable consent to system use and data monitoring and disclosure and an agreement to comply with all other aspects of the communications system policy;

(c) if users want their Internet use or communications to be private, they should not use the organization's communications sys-

(d) passwords are used for security reasons, but do not prevent system managers from authorized system use and data monitoring and disclosure; and

(e) emailmay be reviewed when users are absent from work. If such warnings are not given, users may argue that they had a legitimate expectation of privacy regarding their communications system use.

Decisions regarding system-use monitoring and data review and disclosure ought to be made by properly trained, high-level personnel for legitimate purposes and with the benefit of proper legal advice.

· Security: Communications systems are vulnerable to internal and external security threats. Technology and expert advice are available to reduce or eliminate many security threats. There are also a number of common sense security precautions: (a) master passwords and other security-related information should have limited disclosure; (b) user passwords should be non-obvious, hard-to-guess, confidential, and changed on a regular basis; (c) all computers should have password-protected screen savers; (d) users should log off the system at the end of the day; and (e) system hardware should be secured. Information technology (IT) personnel can present a security risk. They may have access to passwords and other security-related information that may be misused with serious consequences. For this reason, there should be careful prehiring screening of all IT personnel, and routine post-employment procedures should be established and followed.

 Confidentiality protocols: External email is not secure or private unless it is encrypted. For this reason, it may be prudent Accordingly, it is important to advise all for a CSP to prohibit the use of unencrypted

external email for sending or receiving confidential information, including trade secrets and solicitor-client privileged information, and to require all external email to be marked with a confidentiality warning, for example "Confidential—Do Not Distribute or Disclose—Do Not Forward Without Disclose-Do Permission of Sender-Please Immediately Notify Sender if You Receive this Message in Error and then Purge the Message."

A CSP might also require that internal email containing confidential or solicitorclient privileged information be properly labeled as "Confidential" or "Solicitor-Client Privileged" and be distributed on a need-toknow basis

The uncontrolled use of data encryption can interfere with data access and system monitoring and maintenance. Accordingly, a CSP might also contain encryption guidelines, including permissible encryption methods and when encryption should and should not be used.

- · Data retention and destruction: A CSP should include a data retention policy. The fundamental goal of such a policy is to ensure that electronic data is organized, archived and stored in a secure manner that provides for efficient retrieval for business purposes, including legal disputes. It should also attempt to minimize the unnecessary accumulation of data that serves no business purpose. It might also include an email formalization protocol that requires users to record and file important business-related email permanently, either in electronic or paper format.
- · Software management: For legal (copyright) and practical (system performance, maintenance, and support) reasons, a CSP may prohibit the use of software that is not properly licensed and approved by IT person-
- Compliance: Users ought to be warned that CSP violations may result in discipline corresponding to the gravity of the offence, including summary dismissal, and restrictions on communications system use.
- Notice and acceptance: A CSP should form part of the organization's policies and procedures manual and the communications system user manual. A CSP should state that use of the system constitutes acceptance of the policy and agreement to its terms. The safest course is to require all users to sign a written acknowledgement that they have read and understood the CSP and agree to abide by it, although in some circumstances that may not be practicable.

A CSP should be well publicized. Users should be reminded of it on a regular basis. On-screen reminders and non-privacy warnings can be programmed to display as part of log-on procedures. Similar notices may be communicated periodically by memorandum or email.

BY BRAD FREEDMAN

ommunications systems can greatly enhance user productivity and enterprise profitability, but they can also present substantial risks and liabilities. This article offers suggestions for the creation and implementation of a communications system policy (CSP) to enhance system benefits and reduce system risks and liabilities.

Risks and liabilities overview

The perils of communications systems were discussed in the February 1998 edition of The Computer Paper, and include: (a) liability for civil and criminal misconduct; (b) a source of embarrassing and harmful electronic evidence; (c) infringement of user privacy rights; (d) security concerns; (e) loss of confidentiality and solicitor-client privilege; and (f) adverse effects on user productivity and system resources and performance.

Policy overview

An effective CSP should educate users regarding communications system risks and liabilities and address the ways in which the system can be used and misused. A CSP should be compatible with the organization's culture. It should reflect well on the organization and its users, since the policy itself may be publicly disclosed and subjected to judicial scrutiny.

A CSP should include appropriate explanations, so that it will contribute to a healthy workplace environment and not create undue stress or adversely affect morale. The CSP should be prepared with proper legal advice to ensure that it is consistent with applicable laws and contractual obligations, including collective bargaining agreements. It should also be prepared with proper technical advice.

Policy topics

The following are some of the issues that should be considered in preparing a CSP:

• User Education: One of the most impor-

Continued on page 80



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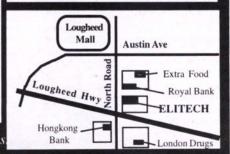
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VANCOUVER (NB)-BestWare Canada Inc. of

Mississauga, Ont., announced Comdex/PacRim trade show in Vancouver, that it will add its M.Y.O.B. OfficeLink datatransfer capability to M.Y.O.B. Premier, the company's multi-user accounting software, early this year. OfficeLink allows accounting data to be transferred to Microsoft Word and Excel and Corel Corp.'s WordPerfect with a single mouse click, BestWare claimed. This

can be used for, for example, generating form letters from lists of overdue accounts generated by the accounting package.

Contact: BestWare Canada http://www.bestware.ca

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TORONTO (NB)-Gavel & Gown Software Inc. has announced Amicus Attorney Pro, version 3.0, for the Macintosh. The case management software is an extension of Gavel & Gown's existing Amicus Attorney package. Working with the company's Amicus Team software, the new release handles shared client file information, conflict of interest searching, centralized contact management, and group scheduling.

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Mobile releases database software for Psion 3 LONDON, England (NB)-Mobile Software

has unveiled Mobile Pages, a Psion Series 3 package it claims allows people on the move to access subsets of appropriate business information from virtually any corporate system, independent of the application and originating database, via the Psion Series 3 personal digital assistant (PDA).

According to the company, the software differs significantly from any other Psionrelated package in that it produces a fully compressed and relational database allowing users to access large volumes of information very quickly.

The package is aimed at companies in a wide variety of industries including insurance, shipping, oil and defense. The company claims it is so confident of the software that it is offering potential users a free trial.

Under the trial offer, Mobile Pages will generate databases from data supplied by participating companies and then send it back to them for evaluation. Anyone can participate regardless of whether they own a Psion Series 3, as the software and data can also be evaluated on a PC, the company claims.

Further details of the software and free trial, including licensing terms, can be found at Mobile's Web site.

Contact: Mobile http://www.mobilepages.com

Communications system policies Continued from page 78

• Insurance: As part of a CSP preparation process, it is prudent to ensure that adequate insurance is in place to cover potential communications system liabilities.

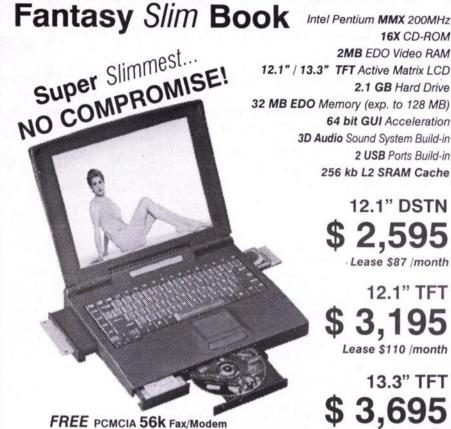
Policy review

Communications systems will continue to evolve. For this reason, CSPs and their implementation should be reviewed on a periodic basis. This review process may also provide invaluable information that can be used to improve the system and the benefits it provides, and to identify and reduce new risks and liabilities.

Conclusion

Modern communications systems can give rise to substantial risks and liabilities. A clear and comprehensive policy, prepared with proper technical and legal advice, can reduce those risks and liabilities. Every business should have a communications system policy that educated users and establishes guidelines for proper system use. \square

Bradley J. Freedman is a trial lawyer with the Vancouver law firm Ladner Downs. His preferred areas of practice include intellectual property law and commercial litigation. He can be reached by email at bfreedman@ladner-downs.com. This article is of a general nature, and cannot be regarded as legal advice. (c) B.J. Freedman 1997



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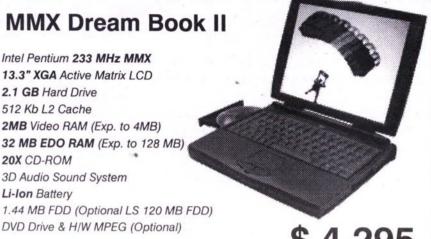
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Buying basics for network printers

BY GEOF WHEELWRIGHT

etworked printers are in demand. Many more manufacturers are now moving into the market for printers that will operate over a corporate network to be shared by large numbers of users. The degree to which they are successful appears to depend as much on how they meet the requirement of being a well-behaved network device, as on how fast or how well they print.

There are about five qualities you would typically look for in a network printer. Some of these are important to standalone users as well, but the lack of any of these qualities in a networked printing environment becomes a much more acute problem when many users are trying to access and work with a given network printer.

Speed and memory capacity

No one likes to wait around for a printer to spit out a long document. They like it even less when there is a huge lineup of people behind them who are waiting for their much shorter documents.

There are a number of factors that go into printer performance. The two most basic are the "time to first page" speed and the memory capacity of the printer. A printer that prints quickly after the print button on-screen is pressed is far preferable to one that needs to do a lot of processing before it actually begins applying image or text to paper.

The speed of the processor inside the printer, the effectiveness of the printer driver software and the speed of incoming print data will all have an impact on this performance measurement. One of the other contributing factors to this—as well as overall printer speed —is the amount of memory in the printer.

If you are printing long documents, or even just those containing large amounts of graphics or photography, then memory makes a difference. When your computer sends data to the printer over the network, it arrives to the printer's RAM first. It is held there in a "cache" until the printer can print what is in the memory, making room for the next batch of data from the network or, in the case of a standalone configuration, the computer.

The more RAM in the printer, the more quickly it will be able to accept all the data from the network. This will not only help speed up printing (since one of the performance bottlenecks in the system can be the time it takes for data to get from network to printer), but will also "release" the network from the print job more quickly.

Paper capacity and flexibility

Another frustration for users who share a printer over an office network is that the printer often runs out of paper.

Finding that there's no paper left in the printer is almost as frustrating as running out of toilet paper at the wrong moment. There are several features that can be built into a network printer to minimize this problem.

The first is a high-capacity paper tray that can hold hundreds of sheets. Some high-volume network printers have been known to handle up to 2,000 sheets before running out.

The second feature is building some "intelligence" into the on-board printer software so that it can generate a message—either on the printer's external control panel or over the network to the person responsible for refilling the paper—when the printer is getting low on paper. This functions in the same way as the warning light" on your car's fuel gauge, letting you know that you have to refill soon or you'll be out of gas.

The third feature that can be designed into the system to reduce paper-related problems is multiple paper trays for different sizes of paper. If the printer is only capable of handling one type of paper at a time, then you increase the risk of someone leaving legal size paper, for example, in the printer tray when you want to print letter size.

If there are multiple paper input trays that allow you to dedicate a given tray for a different size or stock of paper (or even letterhead paper or overhead transparency film), you will save a lot of time changing print media. And users of

the network printer will be a lot happier.

Cost of consumables

This requires a bit of thinking. Several different printing technologies are available for use on network printers and each carries with it a different set of consumable costs. Consumables are simply items your printer "consumes" that have to be replaced.

In addition to paper (a consumable in all printers), other items would include ink cartridges (on an inkjet printer), toner cartridges and drums (on a laser printer) and solid ink "sticks" (on a solid ink printer). The cost of consumables is commonly measured on a "per page printed basis." Although, for example, you may pay less for an ink cartridge on an inkjet printer, you will likely find that the number of pages you can print with the ink cartridge is far lower than the number of pages that can be printed with a slightly more expensive toner cartridge for a laser printer. That is one of the reasons why monochrome laser printers still enjoy a far larger share of the network printer market than any other single printer technology. On a "per page" basis for consumables, they still offer the lowest cost.

Quality of output

The documents produced on your network printer are often going to be an integral part Continued on page 86

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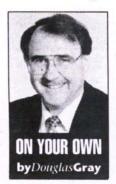
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A lot of people have had dreams of making money from their creative ideas. For many, however, the dream turns out to be an expensive nightmare. There are lots of "creative" scams and schemes out there. So how do you explore the business potential of your idea and avoid the pitfalls? Here are some tips.

Pitches to avoid

Here are some common pitches that you should be wary of. Most of the pitches you see aired on television, radio, newspapers or magazines are from companies based in the U.S. That is why the hints below came from the U.S. Federal Trade Commission Consumer Alert bulletin, which is produced in cooperation with the U.S. Patent and Trademark Office. The cautions are equally applicable to Canadians.

"We think your idea has great market potential" • Few ideas, however good, become commercially successful. If a company fails to disclose that investing in your idea is a high-risk venture, and that most companies never make money, beware.

"You need to hurry and patent your idea before someone else does" • Be wary of highpressure sales tactics. Simply patenting your idea does not mean you will ever make any money from it.

"Our company has licensed a lot of invention ideas successfully" • Ask for a list of the company's successful clients and confirm that these clients have had commercial success. If the company refuses to give you a list of successful clients, it probably doesn't have any.

"Congratulations! We've done a patent search on your idea, and we have some great news. There's nothing like it out there" • Many invention promotion firms claim to perform patent searches on ideas. Patent searches by a fraudulent invention promotion firm usually are incomplete, conducted in the wrong category, or are unaccompanied by a legal opinion on the results of a search from a patent attorney. An unscrupulous firm promotes any idea or invention without regard to its patentability, and may market an idea for which someone already has a valid, unexpired patent, exposing you to a patent infringement lawsuit.

"Our company has evaluated your idea, and now wants to prepare a more in-depth research report. It'll be several hundred or thousand dollars" • If the company's initial evaluation is "positive," ask why the company isn't willing to cover the cost of researching your idea further.

"Our company makes most of its money from the royalties it gets from licensing its clients' ideas. Of course, we'll need some money before we get started" . If a firm tells you this, ask why they're not willing to help you on a contingency basis. Unscrupulous firms make almost all of their money from large, upfront fees.

"Our research department, engineers and patent attorneys have evaluated your idea. We definitely want to move forward" . This is the standard sales pitch. Many questionable firms do not perform any evaluation at all and don't even have the "professional" staff they

Where to turn for objective information and advice

There are many options available to increase your learning curve. Here are some practical

- Contact or visit your provincial Canadian Business Services Centre office: they have a goldmine of information and advice. The offices are listed in the blue pages of your telephone directory under provincial and federal government. You can also reach them at their Web site: http://cbsc.org.
- Obtain copies of the free publications available from Industry Canada on patents, trademarks, copyright and industrial design. Industry Canada can be reached through the blue pages of your telephone directory under federal government. The ministry's Web site address is http://strategis.ic.gc.ca.
- Contact the Canadian Industrial Innovation Centre in Kitchener, Ont. This organization, partly sponsored by government, has an excellent reputation and provides a range of helpful services in candidly assessing the market potential of your idea. Contact the centre at 800-265-4559 or through its Web site at: http://www.innova-

Continued on page 86

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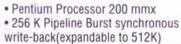
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NETWORKING TRAINING



Buying basics for network printers

Continued from page 83

of the "public face" of your company. You therefore want the quality of this output to be as crisp, clear and readable as possible. Unlike a "personal printer," which you might use to to print draft documents that you can review on paper, a network printer, being used to produce reports and other materials that will be

sent to customers, needs to offer the highest possible quality.

Ease of network management and maintenance

This last issue is becoming increasing important as more and more printers are being installed on networks. Once a printer is on a network, its ability to "communicate" over a

network becomes almost as important as its ability to print. The printer must be able to tell the network administrator (or whoever is in charge of the printer) that it needs paper, that it needs toner, that it has a paper jam, that it can't handle any more print requests because its memory is full-or whatever other issues require attention.

In an ideal world, network administrators

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should be able to get enough information from each printer on the network to figure out how much paper it has, when it is next likely to need toner, how many paper trays it has, perhaps how many sheets have been printed since the paper tray was last filled and even which users have been sending the most print requests.

This kind of information not only makes the printer easier to manage, but it gives network managers enough data to make intelligent decisions about which printer supplies to buy-and whom to talk to about excessive printing out of interesting pages discovered while browsing the Web.

When you consider all of these issues, it becomes clear that buying a printer to run on your network adds a whole raft of new considerations to your buying decision. And that is without dealing with the issue of how the printer gets connected to the network.

Depending on your network, a printer can either be attached to a PC on the network and "shared" as a resource by that PC or it can be a standalone resource on the network. Unless the printer is configured as a standalone resource, it will not be available unless the PC from which it is being "shared" is also available to the network.

This does mean, however, that you generally need a printer that comes with a network connection, or you have to buy an add-on network connection for the printer. In addition to making the printer more available to the network (because availability is not tied to the activity level or reliability of the PC that is "sharing" it out onto the network), having a direct network connection for the printer can improve print speed as it means that data is moving at the speed of the network connection and not the speed of a standard parallel or serial connection.

So take time in looking at printers that meet your network's needs and keep in mind that a printer for use beside your desk-and sole use by your PC-is a completely different beast than one than needs to serve the requirements of a group of networked PC users.

Do you have a brilliant invention idea? Continued from page 84

Finally, you should obtain initial consultations from a minimum of three patent attorney's before you proceed further. Look in the Yellow Pages telephone directory under "patent attorney." Most initial consultations are free. Ask in advance. Keep in mind that a person licensed to be a "patent attorney" in Canada, does not have to be a lawyer, but lawyers who specialize in intellectual property are frequently patent attorneys as well.

My bias is to obtain advice from a lawyer who specializes in intellectual property to give you candid feedback, after you have discussed the facts and your plans. They tend to have a combination of technical competence plus tactical and strategic streetsmarts. They can also advice you on the types of documentation to protect you, if you are going into business with other investors or partners. \square

Douglas Gray, LL.B. is a Vancouver-based expert on small business. Formerly a practicing lawyer, he is now a consultant, speaker and author of 16 bestselling books. including The Complete Canadian Small Business Guide (McGraw-Hill Ryerson) and Start and Run a Profitable Consulting Business (Self-Counsel Press).

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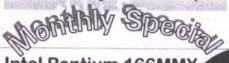
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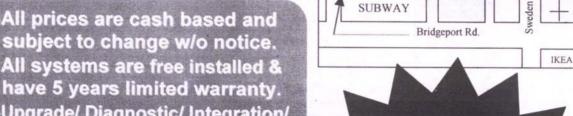
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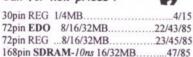
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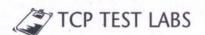
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All dimensions shown are CRT size, viewable size is smaller



Pentium II @ 233 MHz

Nothing entry-level about systems powered by Intel's slowest PII

BY STEVE HALINDA AND TIM BINGHAM-WALLIS

If you're on the lookout for a new PC and didn't get a chance to buy anything this past holiday season, don't worry. Whether you want a new PC or are planning an additional system for your home or office, the PCs we review this month are very capable, fully loaded and ready for just about anything you could throw their way.

My, how things have changed...

It's been three months since our last systems survey, and it's quite remarkable to see the many changes that can take place in such a short time. And compared to a year ago, the changes are even more striking.

When we did our high-end system survey in February 1997, the top-of-the-line machines featured 200 MHz Pentium processors, 32 MB of RAM, video cards with 2 MB or 4 MB onboard, hard drives with average capacities of 3.2 GB, and CD-ROM drives topping out at 12x speeds. Modems were pretty much standard at 33.6Kbps with the 56Kbps variety almost ready for market.

That set of features is now common for entry-level machines. In fact, as far as the Pentium family is concerned, the only model that Intel will be making is the 233 MHz MMX variety. To move up from there, you'll have to go to the Pentium II family—which starts at 233 MHz.

What defines the high end today? At the end of January, Intel announced its 333 MHz Pentium II processor, and said that about a dozen manufacturers would have computers for sale immediately, based on the new processor.

Compared to 333 MHz at the top end, the systems we look at this month are powered by entry-level Pentium II CPUs. But they have changed from head to toe, compared to what would have been considered entry level—or high end, for that matter—a year ago.

As we've mentioned, the processors are the slowest of the Pentium II family, with a clock speed of 233 MHz. With RAM prices being so low, configurations with 64 MB in total are becoming common place. Video cards with less than 4 MB onboard are uncommon, hard drives with capacities of 4.3 GB are standard, and 24x CD-ROM drives are available for \$100, with the new 32x family just now starting to make its way into the mainstream. Today's modems are standard at 56Kbps—anything slower is rare. All that for just over \$2,000. The amazing part is that, in the span of 12 months, systems that were considered high end don't even qualify for this lab test.

Is your system obsolete?

But before you experience another bout of CPU insecurity, remember the one thing we always try to emphasize: your computer is not obsolete just because there are newer, fancier products on the market.

In fact, your computer will always be good enough as long as it meets your own needs,

and helps you get your work done. Why spend a few thousand dollars on a new machine every other year if the only time you really use the thing is to work out how much money you owe the government for that year?

If you have a computer that was defined as a high-end system a year ago, it is still a good machine. Even the most demanding applications (games included) will run just fine with that setup. The systems we reviewed this month are a great choice for first time buyers, or someone looking to upgrade an old system or perhaps to add a second system to the home or office.

If it seems like you're getting a lot more for your money than you were a year ago, that's because you are. It's amazing to see what \$2,500 will buy you today compared to last year. And because of this, now is without a doubt the best time to get a new PC or replace an aging one. Some people are even buying a new PC just because the prices are so low, and they feel they could benefit from having two systems in the house. This holds especially true if there are kids in the household. A few years ago it was quite difficult to afford two machines that could handle the latest games and applications. Today it's another story.

On the horizon

We are eagerly awaiting a few items expected to make their appearance sometime in 1998. One example is the new line of Pentium II processors. As we've already mentioned, Intel just announced the 333 MHz processor, and machines based on it should be available now. Due out later this year are 366 MHz and perhaps 400 MHz Pentium II processors. A new chipset from Intel, the 440BX, is also expected sometime in the first half of '98.

At long last, bus speeds of 100 MHz will be officially supported by the processor giant, something that is possible with today's motherboards using the 440LX chipset, although not supported by Intel.

As far as systems as a whole are concerned, we will be seeing the new line of 32x CD-ROM drives making its way into nearly every computer before the summer. AGP video cards are already available from nearly every major player in the market, although the operating system support is still a few months away pending the release of Windows 98 and NT 5.0. In the meantime, these cards are available, but don't offer a significant improvement, if any at all. But considering the fact that they cost nothing more than their PCI counterparts, you may as well get one with your new computer in anticipation of Windows 98's eventual release.

DVD drives are also expected to reach affordable levels later this year. Some users have already jumped on the bandwagon and bought one for several hundred dollars, while

others are holding out for prices to come closer to the \$200 mark.

The prices of CD recorder (CD-R) drives have also come down greatly over the past year, and are expected to dreeven further during '98. For many, CD-R are CD-RW (CD-rewritable) are the backup methods of choice. CD-R drives can be purchase for as little as \$430 for an IDE version, while pack of 10 blank discs are readily available for \$30.

- CD-RW discs are still rather expensive roughly \$25 each, but when you consider the fact that you can reuse them over and over it's not as bad. The CD-RW drives by more manufacturers are also just starting to appear and surprisingly, they don't cost much more (if anything at all) that regular CD-R drives.

Other storage methods such as LS-120 dives and Zip drives have come come down price and are already part of some mid-rang systems by manufacturers. An internal Z drive can be purchased for as little as \$12 but the newer LS-120 drives still cost at leas \$50 more. But, as history has proven over arover again, no matter what it costs today, will undoubtedly cost less tomorrow.

Our tests

We asked vendors to send us machines base on 233 MHz Pentium II processors and 64 M of RAM. All other components were left up the vendor, but we specified that the oversystem cost should be kept to \$2,500 or lend including a monitor.

We received a good mix of machines, each with their strengths and weaknesses. However, overall, each machine had enough desirable qualities to satisfy most users. It usual, we ran the BAPCo Sysmark32 benchmark tests on all machines, which we confidured to run in a resolution of 1,024x768 at 16-bit (65,536) color depth.

The contenders

Readers often ask us why we didn't include this machine or that manufacturer in a latest. There are a number of reasons why manufacturer's machine doesn't show up any given lab test. Manufacturers may n have a model in stock that fits our requestries may be in the middle of a model changand don't want to test a machine that wou be no longer available when the report

Continued on page 9

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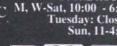
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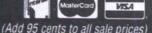
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Pentium II @ 233 MHz

Continued from page 88

published. Or, they may have their own private reasons for not wanting to participate. However, we invite all national and major regional PC makers to submit models for testing. This month, we received and report on the following.



One of the lowestpriced systems in this month's survey comes from Empac. This Pentium II machine has everything you would need in a complete system.

The Pentium II processor runs on a Shuttle motherboard with the 440LX chipset. Total RAM in the system amounts to 64 MB (as we requested), while the video subsystem consists of a video card with the S3 ViRGE DX chip with 2 MB onboard. A Western Digital 4.3 GB drive with Ultra-DMA support is used for storage, while a 24x CD-ROM drive from Creative Labs handles multimedia applications. A 56Kbps Motorola VoiceSurfr is used for communicating with the outside world with K56 Flex technology.

As far as performance goes, this machine won't win any speed tests due to its slower video card, but it does maintain a good price/performance ratio and comes with a two-year parts and labor warranty.

Compucon



The second fastest system in this month's survey comes to us from Fastech Computer, in Richmond, B.C.

The Compucon system has a nice mix of great components, which helped it achieve

its score of 259 on the BAPCo benchmark suite. The Pentium II 233 MHz processor and 64 MB of SDRAM are standard components in this machine. The Matrox Millennium II video card with its 8 MB of high-speed WRAM onboard can take a fair share of the glory for the overall high score this machine was able to accomplish. The popular Quantum Fireball 4.3 GB hard drive with UDMA support is also part of this system, as are a USRobotics 56Kbps modem, 24x BTC CD-ROM drive and a SonicVibes S3 PCI sound card.

A nice touch to finish off this already great machine is the LS-120 SuperDisk drive, which fills the role of the system's primary floppy drive and backup drive. Priced at \$2,450 and backed by a three-year parts and labor warranty, this system is certainly worth considering.

CompuPartner



One of the few machines to come in under \$2,000 this month was the CompuPartner system from STD.

The Pentium II processor is backed by 64 MB of high-speed

SDRAM. The very popular Xpert@Play AGP video card from ATI is found inside this system, and contains 4 MB of SGRAM. In the

area of high-performance desktop graphics, this card is giving the Millennium II a run for its money, and definitely aided this system in achieving its high overall score on our bench-

Multimedia components in this system consist of an OPTI 3D sound card and Panasonic 24x CD-ROM drive. Once again, we find the popular Quantum Fireball 4.3 GB hard drive with UDMA support as the primary storage device. Rounding out the system are a pair of multimedia speakers and a 56Kbps faxmodem.

Priced at \$1,999 with a three-year parts and labor warranty, this CompuPartner system is an attractive option for anyone looking for a first computer or an upgrade from a current PC.

Comtronic



The Premium line of computers from Comtronic has passed through our lab on countless occasions over the past couple of years, and each time they've offered very competitive pric-

ing and good overall system performance.

The system we review this month is no exception, making use of the latest technology the industry has to offer while keeping an impressive price/performance ratio. The system consists of a 233 MHz Pentium II processor, 64 MB of RAM, and an ATI Xpert@Play video card with 4 MB of SGRAM onboard. A Sound Blaster AWE64 sound card and the very latest Acer 32x CD-ROM drive are used for multimedia functions, while a Western Digital hard drive with a total capacity of 6.4 GB is the primary storage unit. Also included in the system are a pair of multimedia speakers and an Acer 56Kbps modem.

Darius



Coming to us from TK-IDM Technology in Calgary is this system bearing the Darius name. It offers a good mix of hardware and software, and scored fairly well on the benchmark tests.

Standard issue inside the system is the Pentium II 233 MHz processor and 64 MB of SDRAM. The popular Sound Blaster AWE64 sound card and Panasonic 24x CD-ROM drive combination is used to meet multimedia requirements. The Cirrus Logic 5465 AGP card with 4 MB of SGRAM onboard is a low-cost alternative if you're looking for an AGP video card with decent performance. A 3.2 GB hard drive from Fujitsu is also part of the package, as are a pair of Yamaha M7 speakers and a Motorola 56Kbps voice/faxmodem.

On the software end of things, you get the Microsoft Home Collection, which includes Works 4.0, Money Home Banking, Magic School Bus, Greeting Workshops, Fury III and the MS Interactive CD Sampler. Priced at \$2,450, this system comes with a three-year parts and labor warranty.

Hits

Computers bearing the Hits name are well known at TCP Labs for offering the best Continued on page 92



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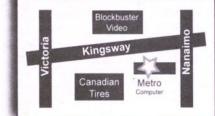
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Pentium II @ 233 MHz

Continued from page 90

components, great performance and a great price/performance ratio. This month's system is no exception, and should please anyone looking for a new Pentium II machine with all the bells and whistles.

To start off, we have the Pentium II 233 MHz processor and 64 MB of RAM, as we requested. All of the other components,



which were left up to the manufacturer, are top notch and leave little to be desired. For superior desktop graphics, the Matrox Millennium II AGP with 8 MB of WRAM found in this system

will go a long way towards increasing the over-

✓ Pentium-200MHz CPU w/MMX Technology

✓ Pentium Motherboard /512k PB Cache

✓PCI SVGA 2MB Video Card./.MPEG

₹16 bit 3D Sound PnP / 80W Stereo Speaker

₹33.6k Int. Voice Fax / Modem/Microphone

✓32MB 168pin SDRAM

✓1.44 MB 3.5" Floppy Drive ✓15" NI L/R SVGA Monitor

✓24 x EIDE CD-ROM Drive

104 Key Win95 Keyboard

#\$195 #P150 / P166 / P166 MMX/ P233MMX

*AMD K6 233 MMX: \$1,275

\$100

\$205

\$120

\$175/275

\$415 / 595 \$805 /1085

\$125/135

\$70/250

\$155

\$165

\$190

\$235

\$250

\$345/505

\$170/245/285

✓ Mid-Tower Case / 230 W Power

✓2.5GB Hard Drive

all performance of this machine. The same can be said for the 4.3 GB UDMA Quantum Fireball hard drive, which tends to be a favorite these days among system vendors.

Finishing off the system are a brand new 32x CD-ROM from Toshiba, a speedy 56Kbps modem from Acer and a pair of 90W multimedia speakers. Priced at \$2,199, this system comes with a two-year parts and labor war-

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A new contender to this month's Test Lab is this system coming to us from Jaba System Inc. in Markham, Ont. Besides building workstations and server systems, Jaba is also the Canadian distributor

for Tyan motherboards. Its products are available through retail outlets in several locations all across Canada.

Jaba's very first system submitted to our Lab wasted absolutely no time in making a name for itself. It was loaded with nothing but the best components, and managed to take first place on the benchmark tests. The Pentium II processor and 64 MB of SDRAM work through a Tyan 1692S motherboard.

The folks at Jaba decided to go with a video card that we've not yet seen in any of the PCs that have come through the Lab: the Diamond Fire GL 1000 Pro. It contains 8 MB of SGRAM and managed to play a key role in propelling this machine to the very top. Another great choice was the use of the new Quantum Fireball 6.4 GB UDMA drive, known for its high transfer rates and low access times. A Sound Blaster AWE64 and Panasonic 24x CD-ROM drive are the key multimedia com-

To round it all out, there is also a lowest-priced, but it sure can perform.

Mycomp



One of three systems Mycomp from

Millennium II AGP card with 4 MB of WRAM, a Sound Blaster AWE64 sound card, a Western Digital 4.3 GB UDMA hard drive and a BTC cations needs, there is a 56Kbps faxmodem from USRobotics. A pair of multimedia speakers is also part of the system that comes with

NEC Direction SPL 233



Direction line is the SPL 233, based on Intel's Pentium II processor running at MHz. equipped with 64 MB of SDRAM, and pretty much all the bells and

whistles to keep any computer enthusiast happy for quite some time. There's a 9FX Reality 334 AGP video card from Number Nine with 4 MB of SGRAM onboard for superfast graphics, a Quantum Fireball 3.2 GB hard drive with Ultra DMA support for storage, and a USRobotics Sportster 56Kbps modem for reliable communications.

The Place to Build Your Own Box Intel Pentium II 233 MMX Intel Pentium 200 MMX

- ✓ Pentium II-233MHz CPU /512K
- ✓ ASUS P2L97 Intel 4401 X Chipset/ AG
- ✓32MB 168pm SDRAM
- ✓ Quantum ST3.2GB Ultra-IDE Hard Drive ✓ ATI PCI 3D 4MB Video Card

- ✓1.44 MB 3.5° Floppy Drive ✓ATX-Tower Case / 256 W Po ✓104 Key Win 95 Keyboard ✓Logitech Mouse

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✓104 Key Win95 Keyboard ✓ Microsoft Ver2 / Logitech Mous

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this month to be priced at \$2,450 is this machine Mynix Technology. It features a Pentium II processor at 233 MHz, 64 MB of SDRAM, a Matrox

24x CD-ROM drive. To meet your communia three-year parts and labor warranty. Overall performance on this machine can be classified

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Pentium II @ 233 MHz

Continued from page 94

Multimedia components in this system consist of a Goldstar 24x CD-ROM drive and a sound system equipped with the Yamaha OPL3-SAx chipset. For your home or business, NEC will include a copy of Microsoft Office 97 Small Business Edition for increased productivity. On our benchmarks, the Direction SPL performed quite admirably, achieving an overall score of 247, which places it in the same league as some of the fastest systems in this month's survey. With an estimated selling price of \$2,449 including a 15-inch monitor, the Direction SPL 233 is one fine piece of computer hardware.

Packard Bell Platinum 3000



One of Packard Bell's latest in its Platinum series is the model 3000. It didn't take long for us to realize this system is the most well-rounded PC in the entire survey and would make

an ideal family computer.

It contains a 233 MHz Pentium II processor, 32 MB of SDRAM that can be expanded to 256 MB, a video card with 4 MB onboard, a 16-bit sound card featuring SRS 3-D Amphitheater Stereo Sound and a Dolby AC-3 decoding system. A 24x CD-ROM drive and USRobotics 56Kbps voice/faxmodem round out the hardware portion of the system.

A unique keyboard known as the MediaSelect Keyboard is also included with the Platinum 3000. It allows you to control your CD, phone, and speaker volume all at the touch of a button.

On the software end of things, this computer has something for every member of the family: Microsoft's popular Encarta '97 Encyclopedia, Math Adventure and Word Adventure from 7th Level, the Microsoft Arcade 1.0, The Best of Microsoft Entertainment Pack, G-Nome, Works 4.0. Word 97, Money 97, Intuit Quicken SE, Greeting Workshop, and MGI Photosuite SE.

There is also a slew of online service software thrown in for all the major services such as AOL, CompuServe, Microsoft Network. Packard Bell Direct Internet Access, Planet Oasis and Prodigy. Visit the link for the Platinum 3000 at http://www.packardbell .com/products/97models/pl3000.asp for details.

If this is your idea of the perfect family PC, it can be yours for \$2,699, which includes a 15-inch Packard Bell monitor and comes with a one-year parts and labor warranty. Although it's only equipped with 32 MB of RAM, an additional 32 MB module at today's prices would cost you a mere \$100.

Pine



Computers bearing the Pine PC name come to us from Samtack Computer Inc. This month, the system we tested was equipped with a great mix of good quality components while

still managing to come in below our ceiling price of \$2,500.

Based on the requested Pentium II 233 MHz processor and 64 MB of SDRAM, this machine comes with a Supermicro motherboard with the 440LX chipset, a Quantum Fireball 3.2 GB hard drive with UDMA support, and a Mitsumi 24x CD-ROM drive. An STB Velocity 128 AGP video card with 4 MB onboard is used to deliver fast video, while a Sound Blaster AWE64 sound card takes care of the high-quality sound reproduction. A USRobotics 56Kbps voice/faxmodem rounds out the overall package, which is priced at \$2,257 and comes with a two-year parts and labor warranty.

It should be noted that this system was tested in a resolution of 800x600 at 16-bit color due to a problem we encountered at the next highest resolution of 1,024x768, at which all other machines were tested. As a result, this machine had the highest overall score-but didn't win the cigar.

Ultinet



As usual, Ultinet has sent us a machine with top quality components that performed quite well on the benchmarks and is priced under \$2,000. The machine we tested this month consists of a

233 MHz Pentium II processor, 64 MB of SDRAM, an ATI Xpert@Play AGP card with 4 MB of SGRAM onboard, a Sound Blaster AWE64 sound card, a Creative Labs 24x CD-ROM drive, a Quantum Fireball 4.3 GB UDMA hard drive and a USR 56Kbps voice/faxmodem. A pair of 180W speakers and a CD package with over 50 titles including Compton's 1997 Encyclopedia are also part of the system. Priced at \$1,995 with an impressive two-year parts and five-year labor warranty, this system is hard to resist.

Editors' Choices

Performance: Jaba System Inc.

This month's performance award goes to Jaba for its well-built system equipped with excellent components. It managed to climb right to the top when it came to raw perfor-

mance. It has a superb video card, a roomy hard drive, and an LS-120 SuperDisk drive just to make the machine all the more desirable. Without a doubt, this is an excellent system and would make a great PC for both beginner or power-hungry user.



Price/performance: Hits

Coming out with an overall score of 259 on the benchmarks and with a price tag of \$2,199, this machine is a clear winner. Using nothing but the best components from its Millennium II with 8 MB to the new Toshiba 32x CD-ROM drive, this system leaves you wanting nothing.

Overall: NEC Direction SPL 233

There's no doubt whatsoever that the Direction SPL 233 from NEC is the best overall value in this month's survey. It features excellent individual components and comes with MS Office 97 Small Business Edition. To top it off, it achieved an impressive score on our benchmark tests. What more could you want?

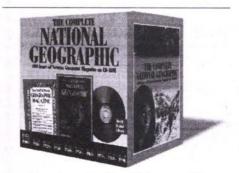


Nothing human is foreign to me

National Geographic releases 30 CD-ROM collection

REVIEW BY JEFF EVANS

the National Geographic Society of America was founded during a time in history when the country was coming into its full strength and self confidence, the period after the Civil War and before the first Great War, when anything seemed possible. The society was, like many all-American institutions, inspired by an English idea, in this case the Royal Geographical Society of London. However, the American body inadvertently took a great leap ahead of its British counterpart, when in 1888 it began to publish a journal popularizing the travels and discoveries of its members and associates.



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With inimitable Yankee showmanship, the National Geographic journal would become a popular-culture institution. In 1908, the editor of the journal took a big risk by publishing an astonishing photo essay on the almost unknown land of Tibet, and a tradition of photographic excellence was begun which made National Geographic magazine America's window on the world.

For nearly six generations of Americans however, despite the magazine's sometimes exploitive and patronizing aspects, the National Geographic remained a dazzling introduction to the world beyond the horizon, and sometimes, to the unexamined world of America's own backyards. After a century of publication, the National Geographic had compiled a vast record of global human culture, nature, archaeology and paleontology, and also of the universe beyond our planet. Many of the peoples, animals, and ecological systems that it described in its early years have since vanished or been sadly diminished.

A full collection of National Geographics is a weighty thing, both in terms of vastness of information, and in terms of sheer bookcase crushing mass (hundreds of kilos of paper, ink, glue and staples, requiring many metres of shelf space). So, it was appropriate that the society, so often a technological leader in photography, printing, and the

expansion into new media such as video. would decide to collect its vast run of issues

into a modern, compact digital format. With the assistance of well-known interactive

multimedia publisher Mindscape, National Geographic has collected its

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entire list of 1,245 back issues into a boxed set of 30 CD-ROMs.

When TCP received a reviewer's copy of the set, we installed it on an IPC computer with a 200 MHz Pentium processor and 32 MB of RAM, running Windows 95. The installation was very simple, and took up only a very small amount of hard drive space.

The CD-ROM set, with many gigabytes of text and graphics, requires a very flexible and powerful search engine, and the one supplied with the set is in fact easy to use, fast, and quite comprehensive. It is easy to search for and call up pictures, maps and articles from any issue, view them on screen and print them out. What isn't possible, unfortunately is to cut and paste text from

articles into a word processor or save them to disks. A basic limitation of the product is that actual pages of text in the magazine were scanned as bitmaps, rather than going through an optical character recognition (PCR) routine and being saved as word processed text files. To be fair, the cost of scanning and doing OCR and corrections, and then formatting the resulting pages as Adobe Acrobat .pdf files, or HTML files, would have been prohibitive. With over 188,500 pages in the series, the extra costs of creating a formatted text file for the series would have run into the millions of dollars, and the retail price of the product would have been much less attractive.

As it is, the scanned text is readable

onscreen, but prints rather fuzzily. The pictures, though, are the main highlight of this title. There are over 155,000 of them, including many famous images that have become a part of the popular memory. One additional minor quibble is that although small scale maps are reproduced, the lavish, large format pullout maps that many issues came with have not been reproduced, possibly due to the difficulty of viewing them easily on a computer screen. Some effort along the lines of a method to allow disk caching of large maps to support scrolling would have been appreciated. Appropriately for a product created for the Internet Age, there is an extensive online resource centre, collector's corner and community centre for owners of the col-

lection. One nice touch was the inclusion of the original advertisements that have appeared in the journal over the last 108 years. These form a perhaps inadvertent pocket social history of American consumerism over many decades. The period from World War II to the early '60s shows American culture at perhaps its most opti-

As it is, this collection is a must for anyone who loves beautiful photography, nature, or the diversity of human culture. The society and Mindscape are to be congratulated in their achievement, although manufacturers of shelving units may notice a slight decline in their business as a result of this collection's appearance. \square

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Tax software a no-brainer!

BY ROD LAMIRAND

ax software is a no-brainer. A pencil and a calculator is the preferred choice only for people who: a) like reading numerical tables in a font called Lilliputian 6 Point; b) have an accountant in the family with the patience of Mr. Rogers; or, c) enjoy the multilevel intricacies, and hollow pleasantries, of Revenue Canada's voice mail system. If you own a computer and don't like any of the above choices, one of the tax programs below

The tax scene

There are fewer personal tax software products on the market than before. This category has thinned as it has matured. Today's Canadian tax products are rich, complex offerings that are well entrenched. What's left are three retail, off-the-shelf, products and a few Internet entrepreneurs with new ideas about tax software.

The good news—the three shrink-wrapped programs have all become better and cheaper. Also good news, the Web-offered programs are challenging how we do our taxes and even how much we pay to do our taxes. It is their innovation in both the technology, and the business model, that is spurring the big three into offering more for less.

The bad news-Efiling remains inconsistent. The basic problem has been that Revenue Canada must be able to show legal proof that you are culpable if there is false information on your return. What if someone were to fill out a T-1 in your name and send it in. Well, you might be chagrined to find yourself under an audit. However, if the form was not signed, or if it could be proven to have been forged, you would not be liable.

So how does our government ensure authenticity for electronic filing? They do so by only allowing registered Efilers to submit returns. These Efiling agents must get, and keep, a form called a T-183, which is simply your signature confirming authorization and knowledge of the return being submitted.

That's a problem. Efilers must be paid. They ask between \$10 and \$20 for their service. Who wants to spend that money on top

of the cost of tax software simply to speed up a refund by a few days or perhaps weeks? Well, clearly a lot of people do because over four million did last year. But it is not enough.

Revenue Canada is very enthusiastic about all types of electronic movement of data and money. Direct deposit, whereby your income tax refund is deposited directly to your bank account has been a big success for them. You get your money faster than you otherwise would, they save the cost of the envelope, the letter, the cheque, the postage and the manpower (Canada Post must be much less excited by this development).

This success has made our federal taxation bureaucracy excited about other possible applications. They are very interested in moving away from paper wherever possible. Efiling is where they are putting the most effort. They claim that, "every million Efile returns saves about 60 persons and thousands of square meters of warehouse space." If they can get you to key-in all those hundreds of millions of keystrokes they are happy.

The solution? Direct public Efiling. We aren't there yet, not by a long shot, but it is coming. There are problems that are being overcome, to do with security and authentication, but it will happen.

In fact, Revenue Canada is currently running a small 300 person direct Efile trial with its employees. The employees that own a computer and work in the designated departments will be taking home a little disk and using their own modems to submit T-1s. For the rest of us it's around the corner but not far. For now we can either print our returns and mail them or save to disk and find an Efiler.

Retail products

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This is the third time in three years we've rated QuickTax as the best of the bunch. This is because QuickTax does it all. It

Apology and Correction

In last month's preview of tax software we incorrectly stated that Tax Made Easy from la Motte Enterprises Inc. was no longer around. A justifiably angry Aubrey Little, president of the company, faxed us to say the company was indeed still in business and that its software would be around for the 1997 taxation year.

Mr. Little writes:

We know that your reviewer has, over the past few years, given less than favorable accounts of our product because it is not Windows based. Much like saying that unless one's car has an automatic transmission, it

should not be purchased to transport people on public highways. TAX made EASY has been available for 12 years with no complaints ever from either our clients or Revenue Canada. Without a rodent and glitzy screens, it is very easy to use and calculates and prepares tax returns as accurately and as fast as any. It is directed at a niche in the market which we want to service regardless of your reviews.

We apologize for this inaccuracy. Anyone interested in more information about Tax Made Easy can contact La Motte Enterprises Inc., 4406 Shore Way, Victoria, BC, V8N 3T9, Tel/fax: 250-477-9145.

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SOFTWARE

doesn't matter if you are talking about using the best spokespeople or designing the best software, Intuit comes out each year with a tax product that can satisfy everyone.



The QuickTax product line itself is extensive. You can buy it on a disk for Windows, or Macintosh, for \$29.95, or you can buy it on CD-ROM for Windows, or Macintosh, for \$42.95. You can even buy the French version, ImpotRapide for either operating system.

Whichever one you purchase, you will get professional software for all provinces including Quebec (unlike the others, QuickTax Deluxe for Macintosh is only available directly from Intuit).

Reviewing QuickTax Deluxe for Windows CD-ROM was a joy. There are two methods of processing. You can simply copy the data from your T-4, and other forms; or you can let the program ask you questions after which it will take you to the appropriate area. For your forty odd bucks you will get all the schedules and forms you need, plus full multimedia.

The system requirements for the Windows CD-ROM version (reviewed here) are: a 486, Windows 3.1 or better (OS/2 or NT also supported), 8 MB RAM, a few MB hard drive space, 2x CD-ROM drive, sound card, mouse and printer.

Gena Katz and Marshall Loeb, prominent Canadian financial personalities, offer advice in a video format. There is really nothing nicer than having something explained by a person. However, because QuickTax is also a disk product there is extensive help in standard written form.

QuickTax comes in a two-stage format. The Head Start version was available before

Leasing Available

Christmas. This version is complete but will not let you file because all tax forms have not yet been finalized by Revenue Canada. When you register the program you automatically receive the final filing version in February. QuickTax will let you do up to 18 returns. There are numerous features for which there is no room here to discuss. Some include: the RRSP Planner, Tax Calendar and Loan and Saving Planner. Whether for its depth, ease-of-use or interface, extensive support, tax reference material, or good value, QuickTax is the best.

HomeTax Final Deluxe Version

From: Softkey Software Products Inc 2700 Matheson Blvd. E., 8th Floor, West Tower, Mississauga, ON, L4W 4V9 Tel: 905-624-0303 www.hometax.com Suggested retail price: \$29.95

Running a very close second and competitive on every count, HomeTax is a beautiful and friendly way to do your taxes. This is a Windows-only product that comes in 16-bit and 32-bit versions. You can purchase it at retail outlets or from the company's Web page. If you are a regular client, you can get the price knocked down to \$19.95-a great value. The CD-ROM version reviewed here, is excellent and does use multimedia, although not a well as OuickTax.

When you are in the program, most help and other information is supplied in a written format. For true full-featured, multimedia you need to run the separate, Multimedia Tutorial.



This is a well-done, overview of the program and various tax information. Although this is very professional work, an integrated format is more useful and convenient.

This small note aside, HomeTax Deluxe is deluxe. System requirements are the same as for QuickTax: a multimedia computer.

Considerable work has been done on this program since last year and it shows. There

- Pentium 166MMX System \$1349 Intel Pentium 166 MMX TX Chipset Motherboard 16MB EDO RAM, 512k PB cache
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SOFTWARE

are dozens of small improvements, from the little man or woman that stands beside your cursor at all times to remind you that you are in the husband or wife's return (easily turned off if you like); to system wide improvements, such as the program's use of browser-like frames

Aesthetically, this is now a beautiful interface. The program uses the newest convention of flat buttons. Also new, the use of button bars that slide to reveal data, as is used in Internet Explorer 4.0. In fact, the whole look and feel of this program is new and slick.

But you're wrong if you think this is a case of beauty over brawn, HomeTax has plenty of functions and features too. Like QuickTax there is an RRSP applet. You can use an interview of forms method of completing up to 16 returns. The Auditor performs the expected checkup to see if you've forgotten anything. One rather interesting new feature is the pie chart representation of any number of different sets of data. For example, you can see a pie showing how much of your money goes to the province, the feds and yourself.

Another is the Watch box, which allows you to drag any numerical box from your return into a little window at the bottom of the screen. Any changes that you make to your return will be displayed in the Watch box.

HomeTax is a great program that shared our Review's Choice award last year. We would love to give all three of these programs this award. Of course, not many people would have watched the Nagano Games if the top three Olympians all received gold.

CanTax 98

From: CanTax (a division of Softkey Software) 200-6130 3rd Street SE, Calgary, AB, T2H 1K4 Tel: 800-265-3800 www.cantax.com Estimated street price: \$36.95



You can't go wrong with any of these three programs, including CanTax. The 98 version builds on the long reputation of CanTax as both a personal tax program and a professional one. The T-1 personal program reviewed here has taken giant steps in the past two years toward truly exciting software.

The earlier, ugly interface, reminiscent of old DOS applications, is gone, replaced by a cleaner, frames-based interface. Ease of navigation is much improved by these changes as is the user's overall comprehension of function. A clean and logical structure makes an enjoyable program and CanTax has figured this out.

At \$36.95 the program is a good bet. You will need the basics of a multimedia machine to get the full value out of the program's video clips. Like its peers CanTax allows for an interview or forms method of filling out up to 15 returns.

New features include the ability to couple two previously separate returns, or to uncouple two previously joined returns. The online manual is well organized and complete. The option to have an adjustable Explorer-style side menu is great.

Software support for registered users is very good. You can use CanFax, a fax back service; Faxline, where you fax them your problem; Hotline, the usual you-pay tech support phone number; and, the company's Web site. The newly improved CanTax Web site is top-notch. For the latest information, email support or product demos visit the CanTax page.

Like the other two programs, CanTax will not allow you to make stupid mistakes. If, for example, you type in an impossible social insurance number or date the program will tell you. One area where CanTax is very efficient is in its use of hot keys. For the professional, or the dedicated user, nothing is faster than logical and consistent hot keys. That doesn't mean CanTax has ignored the rightclick button. Right clicking is content specific and will bring up the most used options for that window or form.

Also available is CanTax Canadian Tutor for \$59.95. This tax learning program also includes CanTax 98 and is a good value for individuals interested in really understanding

Top marks to CanTax for the most improved of the three main contenders. A perennial favorite and well written offering, CanTax Deluxe deserves your considera-

Online offerings

TaxWiz

From: TaxSoftware Inc. PO Box 59112, Edmonton, AB, T6H 5Y3 Tel: 888-413-0370 www.taxstuff.com Price: \$26.95 first year, \$16 thereafter

TaxWiz was reviewed here last year as anything but a wiz. Something has happened though, and it's wonderful.

The wonderful thing is that this little 650KB program is very, very good. Obviously some serious work was been put into improving the program since last year. System



videos and we wish there were no sound Continued on page 102



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GAMES

Head for the hills and the horizon

Players get airborne with new ski race and flight sims

BY GORDON GOBLE

This month we look at two games to get you airborne. From Sierra On-Line comes the latest addition to its Front Page Sports series, Front Page Sports: Ski Racing, while Eidos Interactive gets you flying in a more traditional manner with the civilian pilot sim Flight Unlimited II. Up, up, and

Front Page Sports: Ski Racing

From: Sierra On-Line, Inc.

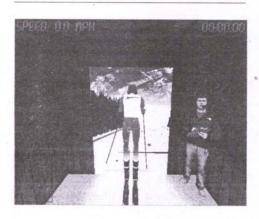
Tel: 800-757-7707

http://www.sierra.com

Minimum system requirements: Pentium 90, 16 MB RAM, 4x CD-ROM drive, mouse, Windows-compatible sound card w/DAC, 640x480 256 colors, 75 MB hard drive space, 50 MB hard drive space after install. Recommended system requirements: As above with Pentium 100 MHz or higher, 32 MB RAM, 16-bit color, 3Dfx accelerator card.

Supports: Windows-compatible joystick, Microsoft Force Feedback joystick.

Street price: \$60



Apart from its inclusion in a Winter Olympics game a couple of years back, skiing hasn't exactly been a Big Thing on computers. And that's strange considering the sport's inherent thrills and spills seem conducive to a virtual replication.

In Front Page Sports: Ski Racing, Sierra On-Line has created an immersive and fairly convincing skiing experience that puts you on the slopes, battling for supremacy at world-class levels. Ski Racing is a quick initial study-very quick, the manual is fairly thin-but once you strap on the skis it's a real challenge to keep fast and accurate enough to excel.

The program showcases a half dozen of the world's finest ski hills (our own Whistler, the States' Aspen, Vail and Mt.

Bachelor, France's Val d'Isere and Germany's Garmisch Partenkirchen), each supposedly rendered to resemble the real thing. And while I'll admit I haven't had the chance (or money!) to visit them in real life, they look and feel both authentic and unique, with enough twists, turns, moguls and technical sections to keep you on the edge of your

Speaking of your seat, you'll be landing on it a lot as you wind your way through the four disciplines-Downhill, Super G, Giant Slalom and Slalom. Game designers have built an impressive physics model, one that really lends the illusion that you're out there on snow and one that makes each turn and event a distinct experience. Just because you've managed to get a handle on the insane speeds and nearly out-of-control horrors of the Downhill doesn't mean you can carve the tight gate-filled corners of the

Adding to the difficulty, the skill level or your artificial opponents cannot be altered. so you'll be facing the same quality of competition whether rookie or hardened vet. The game also forces you to be first down the hill every time, meaning you won't know what times you're up against until your run is done. But, take it from me, these guys (or gals-you can choose to be a female skier) are top notch, so you'll have to be performing at full throttle for a good finish.

Ski Racing is packed with the sounds of swooshing skis, labored breathing, cheering happy throngs when you finish, cheering heartless throngs when you wipeout, and all the appropriate "oofs' and "thuds" skiing can induce. Several viewing perspectives are offered, including three "chase" cams and a first-person, motion-sickness kinda thing while you're skiing and a bunch of convincing TV angles during the replay.

Off the course, Ski Racing lets you customize your attire, boots and skis, though the blades themselves are the only element negatively or positively influencing your showing. World champion Picabo Street gives brief video/animation tutorials and event information, though in the end, your success will be based on a thorough knowledge of each course and your propensity for controlling a sliding skier with a joystick.

As much as I tried to alleviate the problem, Front Page Sports: Ski Racing still does strange things to my Win 95 desktop, sometimes forcing a reboot to get the kinks worked out. But if you are a fan of skiing, it's the only game in town. And a pretty good one at that.

Flight Unlimited II

From: Eidos Interactive Tel: 415-547-1200

http://www.eidosinteractive.com

Minimum system requirements: IBM PC or fully compatible, Windows 95, Pentium 120 MHz, 16 MB RAM, 1 MB SVGA video card (100% DirectX 5.0-compatible), Windows 95-compatible sound card (100% DirectX 5.0-compatible), 4x CD-ROM drive, 190 MB free disk space, Windows 95-compatible mouse, keyboard, and all major joysticks supported. Recommended system requirements: As above with Pentium 200 MHz, 32 MB RAM, 2 MB SVGA video card (100% DirectX 5.0-compatible), 6x CD-ROM drive, 225 MB free disk space, DirectX 5.0-compatible programmable joystick. Street price: \$60

Undeniably, Microsoft has had its fair share of misses during its first few years in the computer gaming industry. However, one title Bill and Co. haven't flubbed is their civilian flight simulation, entitled appropriately Flight Simulator. It just keeps getting better and better with each new version.

For that you can thank, in part anyway, Looking Glass Technologies. Its own take on the flight sim, Flight Unlimited, was released to critical acclaim back in 1995 and certainly pushed the Microsoft product to even greater heights. And now, Looking Glass has struck again with Flight Unlimited II. Distributed by Eidos Interactive, FU II (that has a certain ring to it, doesn't it?) is faster, prettier, and more comprehensive than the original, which should please most serious desktop pilots.

It's very important to remember that a flight sim is not an air war sim, and you can't expect to engage in marauding sprees through the skies, blowing apart everything you see. Granted, collisions may well occur, but the idea here is to take your chosen craft from hangar to hangar and airstrip to airstrip without crashing or bashing along the way. The challenge is in learning to deal with an authentic flight model and essentially doing what real life pilots do. It ain't easy.

First step? Begin perusing the monstrous and thorough manual. Though Looking Glass has taken pains to ensure most laymen can read the thing, there's no hiding the fact that this is serious, realistic and taxing material. And is should be, because FU II is just about as close as you can get to flying a light civilian aircraft without heading down to the local airport.

FU II offers no less than five models from which to choose: the dual-engine Beechcraft



Baron, Piper Arrow, de Havilland Beaver floatplane, a gun-deprived P-51D Mustang, and the relatively simple Trainer. Your location should you wish to accept the assignment is the San Francisco Bay Area, a seemingly constrictive region from first glance, but far less so when you realize Looking Glass has included realistic replicas of all 48 airfields in this surprisingly sizeable region.

There's also a flock of other airplanes up there with you, each intent on getting to their destinations unscathed by the likes of you. And that's where things get tough. Sure, takeoffs and landings are unforgiving and difficult to master, but keeping safely airborne, monitoring the gauges and dials in the virtual working cockpit, keeping an eye on prevailing winds and traffic, and receiving and transmitting messages in what is an extremely congested area is almost mind-numbing.

That realism is only enhanced by the game's environment, a beautifully detailed replica of the entire vicinity. Rivers, inlets, roads, even 3Com Park-they're all here and apparently placed just so. You may be a bit disappointed to find that much of the terrain is actually quite one-dimensional up close and completely non-interactive, though prominent structures are rendered in full 3D.

One of the program's high points certainly must be its depiction of atmospheric and time-of-day conditions, meaning stormy weather-rain in particular-not only looks astonishingly real, but plays havoc with your lightweight craft. Try landing a Trainer in a gale-force winds and you will understand.

Some will undoubtedly consider FU II to be slow, plodding and methodical, others will say it's exciting because of its intricacy and merciless realism. In short, if guns and explosions are your thing, look elsewhere. If, on the other hand, you find yourself constantly gazing upwards wondering what it would be like to fly through the skies without the greatest of ease, c'mon aboard.

Tax software a no-brainer

Continued from page 101

files, but for what it is, there are few com-

The program displays the four T-1 pages individually with tabs to move between them. In the top left corner are useful little icons. The name of the person whose return is being displayed in always visible, as is the final amount owing or to be refunded.

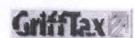
Even features usually reserved for the more substantial programs can be found in TaxWiz. For example, there is an RRSP limit calculation tool, as well as What If scenarios. Also useful, a timer in case you want to know how long you spent on a return.

You can create a spousal return and jump between the two, as you can in almost all tax programs. The most intriguing function of the program is that most words or phrases turn into buttons when the curser hovers over them. Clicking the term takes the user to a comprehensive explanation of the item.

All in all a good little program. If they dropped the price to \$16, TaxWiz could perhaps take over the market!

GriffTax (Mac Only)

From: Colin Griffiths & Associates Ltd. 120 Pineridge Rd., RR#3 Carp ON, KOA 1L0 Tel: 613 839 2455 Fax: 613-839-1764 www.grifftax.com Price: \$30, renewal \$25



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a two pronged approach to tax products. First

Continued on page 108

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■ TUCOWS SHAREWARE

Casino games have no-cash option

BY SCOTT SWEDORSKI

TUCOWS has opened a new online casino game section, TUCOWS Games-(http://www.gamesroyale.com/), which contains all kinds of games, including dice, cards, lotto, sports, bingo and slots. Many of these games can be played offline as well, so it is not necessary for players to risk cash—you can have all the thrills with out the risk by betting "virtual chips" instead.

The applications featured on Games-Royale are supported by fully licensed multimedia Internet casinos. Even on slower connections, gameplay is smooth, and the graphics are incredibly lifelike, with many rendered in 3D animation, and supported by digital sound and voice. Some e-Casinos offer sportsbooks, and players may choose from the standard casino games: Baccarat, Black Jack, Video Poker Games, Roulette, Slots and Craps. There are also Web-based Java games available.

Of course it is no secret that online gaming is controversial. Many anti-gambling and

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gambling support groups have expressed concerns that Internet gaming will increase the likelihood of addiction-problems. They point out that the ease of use and privacy offered by the Internet can be a powerful mixture. At TUCOWS, this has been some of the most popular online shareware available, and to their credit, some sites feature links to Gamblers Anonymous (http://www.gambler-

Acropolis Internet Casinos



Version: 1.01 Revision date: May 9, 1997 Filename: acropolis.exe Byte size: 1,865,344

Licence type: Freeware

Homepage: http://www.acropoliscasinos.com

Also available: Windows 3.x Version

NT compatible: Unknown

Acropolis Internet Casinos offers a great gambling game with the ability to play offline for fun or online for real money in their licensed multimedia Internet casino. 3D graphics, midi sound, and video animation client support the smooth play of the game.

InterCasino



Version: 2.20 Revision date: Aug. 18, 1997 Filename: casino95nt.exe Byte size: 7,457,896 Licence type: Freeware Homepage: http://www.intercasino.com Also available: Windows 3.x Version NT compatible: Yes

InterCasino is a beautifully rendered gaming program that lets you play the standard casino games offline for free or online. You can create a bank account with InterCasino for online gambling with real money, or offline with virtual bets. The two options are actually separate programs so you don't have to worry about accidentally going "live." Intercasino offers CryptoLogic e-cash support, and a full-

World Gaming Casino



Version: 1.0

Revision date: Nov. 1, 1997 Filename: wg0102b.exe Byte size: 12,966,817

Licence: Freeware

Homepage: http://www.worldgaming.net/

NT compatible: Yes

Additional software needed: If you don't already have a DirectX Installed, get the latest version

World Gaming is set up as two virtual Hotels, a Las Vegas-style hotel and casino, Northern Star and Sizzle Towers, a more adult-oriented casino. You can choose from the casinos, or sportsbook, or you can choose to visit a gift shop (which accepts your virtual token winnings as payment for T-shirts pens, hats, and other World Gaming merchandise).

Bingo Zone



Games available: Bingo, Picturama Method of payment: It's Free! Software needed: any browser Homepage: http://www.bingozone.com Bingo Zone is an advertiser-supported, free

Web-based Bingo Palace. Games start at timed intervals, but you can jump in to games already in progress. You can play against hundreds of other players and join them in the chat room during the breaks. You must register to play, and they will mail you a cheque if you win.

Casino caveat

A Windows PC is pretty much a necessity if you want to gamble on the Internet. There aren't any online gambling applications for Pilot handhelds, but there are card games like BlackJack, Let it Ride, PV Poker and Sums, a multi-purpose score keeper that adds up the values in multiple columns simultaneously.

Before you bet, look at each site, check their auditing firm and the claims made for security and privacy. The security at these sites is generally quite good, but this is something one can never take fully for granted on the Internet. Check with your credit card company to determine what liability you might have in the event of a dispute. I usually recommend Internet users (even non-gamblers) establish a credit card with a minimal credit limit for all their online purchases. That way, any liability is limited by the credit limit on the card.

Finally, a word about gambling addictions: some studies have shown online gaming (especially video poker) can be more addictive for some people than the real thing. \square

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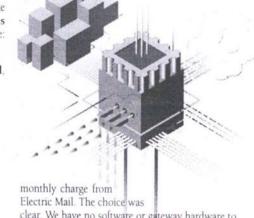
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Jay Caldwell, MIS Administrator for the CGA Association of Canada says:

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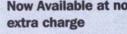
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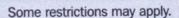












ONLINE

Radio on the Web

A guide to listening in all over the world

BY KEITH SCHENGILI-ROBERTS

lired of the music played on your local radio station? Have you moved to a new city recently and wish you could tune in your favorite station from back home? If you have a computer equipped with a sound card and a connection to the Web, why not "tune in" to the Web and extend you're aural options? There are now several hundred live radio stations you can find on the Web, "cybercasting" from Canadian, the U.S. and around the world.

Back in the early days of the World Wide Web, "multimedia" consisted solely of text and images—any sound added to a Web page was very much an afterthought. These days the Web is alive with sound-if you know where to look for it. With the introduction of streaming audio to the Web just over a year ago, it was only a matter of time before radio

A Radio trail of evidence

stations and other music organizations latched onto the idea of the Web as a new broadcasting medium. Since the first "W" in WWW stands for "World," local broadcasters who can afford the technology can now extend their reach across the globe for a small fraction of what it would cost to set up a shortwave transmitting tower.

There are some pre-requisites before you can expect to tune your radio over the Net: a sound card, a Pentium-class computer and at least a 28.8Kbps modem connection to your Internet service provider. Once you have all of that you need the software to play streaming sound sources from the Web. You will also need to download a streaming audio player for your computer. The three most popular are:

Developer RealAudio

Download site http://www.realaudio.com/

Xing Streamworks

http://www.xingtech.com/

Microsoft NetShow

http://www.microsoft.com/netshow/ Of these three, RealAudio is far and away the

CD voice quality across 28.8Kbps modems. In practice, you will typically find the sound-quality rarely reaches these standards, and generally "The Net is perfect for

most popular, and makes claims on offering near-

playing real music—not just the Top 40 songs over and over"

> -Jim Atkinson, 3WK program director

what you hear through the Web is on par with the sound quality you expect from an AM station. At the moment you can really only expect near CD-quality sound if you have an ISDN connection and are listening to a station that can take advantage of the extra bandwidth to deliver a clear signal. At worst, the station's signal may sound a little murky, or warble a bit, as if you were hearing the station through an aquarium.

Given the typical sound quality, why do broadcasters and listeners find "tuning" into the

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Web so appealing? Variety and access are the main draws for listeners—people who are both looking for an alternative to their local radio dial, and people who want to tune into distant places.

For example, Paul Kinsman, the production director and Webmaster of CHOZ-FM Radio in Newfoundland (The Rock of the Rock at http://www.ozfm.newcomm.net) has found many of the station's Internet listeners "are Newfoundlanders living away from home, and from people in places like South Africa, Norway, Japan, and especially Ireland"apparently Celtic music is hard to find on Irish radio. He also says the station is also listened to by many people "in offices all over North America and Europe."

Why offices? The best Internet connections are usually found in the offices of corporations where email and the Web are integrated for use in peoples' computers. This is one of the main reasons why some broadcasters find the Web so appealing. As Andy Collins of Internet Broadcasting says, "it allows us to reach listeners in places they couldn't before, such as in the office. This gives the listener additional opportunities to listen to their favorite station, thus increasing the 'time spent listening' for the station." Sponsors also like the demographics of the listeners who are highly computer-literate, a group that typically has more disposable income than the rest of the general populace.

So where do you find the stations on the Internet? There is no dial—instead you will find Web pages that list where the stations are. On The Air (http://www.ontheair.com/) is one of the more comprehensive listings of radio sites found on the Web. Here you can find radios stations by location or by category, including alternative, Christian, classical, country, top 40, jazz, news, oldies, rock, sports and urban-if you can find it on the radio dial, you will find it all, and more, on the Internet. Then there's AudioNet (http://www.audionet.com/), which provides more detailed listings of radio stations on the Net, with full descriptions of the type of content and artists played. It also has a more definitive breakdown of radio station types (and includes the audio feeds from television stations), and provides users with interactive menus to help you choose a station of interest.

The number of people tuning into a particular Internet station can be high. Gerold Hug of DASDING from Baden-Baden, Germany (http://www.dasding.de/) says the site is visited by more than 10,000 listeners a day. While this is high for a Web site, it is a huge number by normal broadcasting standards. But audiences are highly targeted, attracting people to music and information they can't find anywhere else. DAS-DING plays Euro-Beat and Euro-Dance aimed primarily at German teens, music that is hard to find in many places in North America. Hug says that "even if our foreign listeners don't understand exactly what we're talking about on DAS-DING, they find it somehow exciting, funny and interesting, listening to some crazy German kids doing interesting things on the Web."

There is even an increasing number of "stations" that only broadcast on the Internet. One of these is 3WK (http://www.3wk.com/), which plays music that can truly be considered "alternative"—certainly when compared to most other "alternative" radio stations across North America. So why did 3WK decide to go the online-only route? 3WK program director, Jim Atkinson, says he "looked into purchasing a traditional broadcasting facility, but I realized that the type of programming that I wanted to do would have a much larger audience on the Net."

Since anybody who tunes into an Internet station has to make some effort to do so (even if this only extends to installing some streaming audio software), the typical Internet listener is more adventurous than your typical radio listener. As Atkinson says, "The Net is perfect for playing real music—not just the Top 40 songs over and over."

But don't throw out your old radio set just yet—radio still has some major advantages over

the Internet. In the near future the Internet is most likely be a compliment to the traditional radio industry, not a replacement for it. Collins, of Internet Broadcasting, believes "Internetonly stations seem a perfect fit for special 'niche' markets [such as all Beatles, all investment stations, etc.], however, listeners are still interested in the local news, weather and traffic conditions, which they get from the local stations." But considering the fact that real efforts

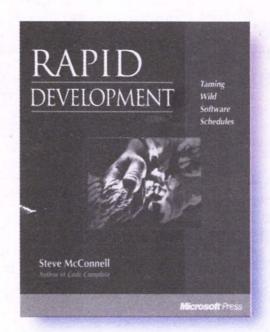
are being made to improve audio quality and the increasing availability of fast connections for the average computer user, more people can be expected to "tune into" the Internet. And there is increasingly plenty for you to listen to—during the time take to research this article, more than 100 stations were added to On The Air's extensive listing.

Soon people will not only be surfing on the Net, they'll also be grooving to it. \square

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Watch for Microsoft Madness Month at your local bookstore beginning March 1, 1998







ONLINE

Michael Vinovich's top special effects sites

ichael Vinovich is a communications specialist at Side Effects Software (http://www.sidefx.com/), a private Canadian company that makes high-end computer animation software. Its Houdini and Prisms 3D computer graphic software packages have been used to create special effects for such movies as Independence Day, Spawn, Terminator 2: 3D and Alien Resurrection as well as for television series like Mighty Morphin' Power Rangers and Outer Limits. The following are his favorite special effects-related Web sites.—Keith Schengili-Roberts

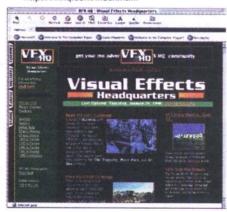
- 1. Charles Poynton's Home Page A great, high-level, grab bag of information about color, design, and digital signal processing. Why should you go there? This guy knows what he's talking about. http://www.inforamp.net/~poynton/
- 2. Adobe Systems Inc. The company makes the most powerful image-processing and drawing software out there and its site is more than brochureware, with tips, galleries, and helpful downloadable goodies.

http://www.adobe.com/

3. Dani's 3D Site • This is an encyclopedic collection of all things relating to computer-generated imaging, from entertainment, to job postings, to the latest hardware specs, you'll probably find it here. http://www.3dsite.com/



4. Visual Effects Headquarters • Do you want to know how they made the aliens swim under water in the new movie? Todd Vaziri's entertaining and informative site delves into the mysteries of how special effects in movies are made. His site covers movies going back as far as 1994. http://vfxhq.com/index.html



 Lynda Weinman's Page • A great place to start if you are thinking about, or having problems with, your graphics in a Web-related context. A comprehensive list of links will help you on your way to solving many problems. http://www.lynda.com/

 Digital Domain • A great looking site from one of the world's leading special effects houses. Find out how a cool company ticks here. http://www.d2.com/



7. Communication Arts • The magazine's home page shows off the best in print and multimedia design with its annual awards pages. This shows you what's possible in the hands of masters. http://www.commarts.com/ Company of the Compan

8. David Seigel's Pages • A controversial site, in that he wants you to flaunt many of the HTML specifications to achieve specific layout effects. It's always thoughtprovoking.

http://www.dsiegel.com/

- The Mining Company's Graphic Design Page • This spot is a great starting point for all things design-related. The links and advice are invaluable. http://graphicdesign.miningco.com/
- 10.Silicon Graphics Home Page This site claims to be one of the largest on the Web at more than 400,000 pages. Not all are accessible to the casual browser, but what's there will give you insight into one of the elite makers of cutting-edge hardware for computer graphics. http://www.sgi.com/ □







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http://www.infomatch.com

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Tax software a no-brainer

Continued from page 102

it offers a Macintosh-only product, not reviewed here, that you can download from its Web page. The software will perform all the functions needed to prepare a personal T-1 form after which you print the return and mail it away.

The second prong of the company's approach is GriffTax on the Web. This is a service more than a product. With it anyone, regardless of their operating system proclivity, can enter data on the GriffTax site and find out what they owe or can expect as a refund. Pay ten bucks and download the resulting PDF file. Print it and mail it in. Clean, simple, and cheap.

The service was not yet up and running in time for this review, but the information on the GriffTax site explains the process and its limitations; while at the same time, answering concerns about the sending and receiving of data of the Net.

This is an innovative and interesting development that is priced right and makes sense. If GriffTax can make a financial success out of it, and there is no reason not to think it can, look for imitators and adopters to abound. Good luck to GriffTax.

CoolTax

From: FLS Research Inc. Toronto, ON Tel: 416-490-8997 www.cooltax.com Price: Free

Last year CoolTax, from FLS Research Inc., rocked the boat by offering free personal T-1 tax software from its Web page. The Web page

says the response was so good the company is doing it again.

CoolTax is adapted for personal taxes from the line of Taxbyte professional tax software, also by FLS Research. The Windows program is available in both a 16-bit version for Windows 3.1x and a full 32-bit version for Windows 95 and NT. CoolTax features include the following.

- an online animated tutorial showing users how to prepare a simple tax return for an individual or a whole family;
- Tax Expert, a wizard to guide users to the correct tax form for data entry;
- and complete tax forms that are fully approved for submission to Revenue Canada.

Other functions include online help, and "what if" scenarios. The company has add-ons for professional users and Efiling, but for the individual user the program is free and it will do up to 15 returns.

Spreadsheet forms

Last year we reviewed two spreadsheet-style programs that use your existing Excel 3, Excel 5, or ClarisWorks program for calculating taxes. Tax Cruncher laments that it will not be producing a product this year.

Icicle Computer had problems when its Internet service provider went out of business but is up and running at http://www.netcom.ca/~icicle and will have its product available by the time you read this.

Considering the range of prices from forty odd dollars to nothing, there is a program out there for you. You can use a pencil if you like but for ease of use, perfect math, and, informative explanations —personal tax software is a real no-brainer!



Your first, last and only defence

BY JEFF EVANS

ontinuing the trend towards PC games based on hit fantasy/sci fi movies (the Star Wars trilogy has been generating some of the better games titles for a decade and a half now), SouthPeak Interactive has released a game based on 1997's highestgrossing film, Men In Black.



Men In Black: The Game that Takes Aim at the Scum of the Universe

From: SouthPeak Interactive Tel: 919-677-4499

http://www.southpeak.com

Minimum system requirements: Pentium 100 MHz. 16 MB RAM, Windows 95, 4x CD-ROM drive, Sound Blaster 16-compatible sound card, 2 MB video memory, 10 MB free hard disk space.

Street price: \$52

Programmed by Gigawatt Studios, Men In Black: The Game is a fully animated 3D adventure game. It allows players to assume the role of any of the three MIB agents from the movie (Agents K, J, or L, played by Tommy Lee Jones, Will Smith, and Linda Fiorentino, respectively), in three different mission environments.

We tested the game on an 200 MHz Pentium PC with 32 MB of RAM. Installation was very straightforward, and when the game was loaded, the 3D action was very smooth. The graphics are very nice: the 3D characters actually look like their movie counterparts, and their motion is very natural and quite detailed-it appears as though either a motion-capture system was used for the movement data, a very good animator, or both.

The gameplay is good, with a tricky set of puzzles and clues keeping the player's interest throughout. Once you've beaten the game once, however, it becomes easier to beat it again from then on. At the highest level of difficulty, however, it is always challenging, especially to older players with slower reflexes (ouch). For those who enjoyed the movie, Men In Black: The Game offers a chance to engage in first person participation in the battle to keep Earth safe from ugly, slimy nasty creatures who make very poor houseguests. Surprisingly like real life actually.

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AE Electronics	138-2981 Simpson Road	Richmond	604-279-8867	www.aebc.com	info@aebc.com	1987	5:1	56	X2	Yes	Yes	No	NA	Immediate
Allnet Exchange Direct	202-2525 Manitoba St	Vancouver	604-617-6434	www.axd.com	sales@axd.com	1995	NA	56	NA	NA	NA	No	NA	NA
Alter.net Internet	303-21183 88th Ave.	Langley	604-882-8480	www.bc-alter.net	info@bc-alter.net	1996	14:1	33	NA	No	No	No	4	<5 minutes
Axion Internet	600-1380 Burrard St.	Vancouver	604-687-8030	www.axionet.com	info@axionet.com	1994	10:1	56	Rock	Yes	Yes	No	13	NA
BC Business Connections	PO Box 2412	Sidney	250-652-4815	commercial.net/vault	bcbc@commercial.net	1995	10:1	56	NA	NA	NA	No	2	NA
Blue Crow Internet	1560-555 W Hastings	Vancouver	604-608-1117	www.bluecrow.com	info@bluecrow.com	1995	9:1	56	NA	No	No	No	5	10 minutes
Canada Internet Direct	555 West Hastings	Vancouver	604-602-1800	www.direct.ca	sales@direct.ca	1994	10:1	56	X2/Rock	Yes	Yes	Yes	NA	2 minutes
CanadaWired Internet Services	410-938 Howe St.	Vancouver	604-606-4616	www.canadawired.com	help@canadawired.com	1997	3.5:1	56	X2	Yes	Yes	NA	6	Immediate
Coastnet	4252 Commerce Circle	Victoria	250-953-2680	www.coastnet.com	sales@coastnet.com	1995	12:1	28	NA	No	No	No	12	NA
ComServe	8080 158A Street.	Surrey	604-543-8577	www.comserve.com	adera@comserve.com	1996	12:1	56	X2	NA	Yes	No	2	NA
CONNET Intelligence Tech. Inc.	2132-12811 Rowan Place	Richmond	604-279-0381	www.conneti.com	contact@conneti.com	1996	10:1	33	NA -	No	No	NA	3	Immediate
Cybersurf Inc.	301-510 W. Hastings	Vancouver	604-669-7873	www.cybersurf.net	info@cybersurf.net	1994	10:1	56	Rock	Yes	Yes	Yes	NA	NA
Cyberus	NA NA	Vancouver	888-815-8888	www.dogday.cyberus.com	dogday@cyberus.ca	NA	NA	28	NA	No	No	No	NA	NA
Digital Ark	306-576 England Ave.	Courtenay	800-275-4260	www.ark.com	info@ark com	1996	20:1		NA	No	No	No.	8	1 hour
Digital Rain Internet	310-7231-120th Street	Delta	604-543-3025	www.digital-rain.com	account@digital-rain.com	1993	7:1	33	NA	Yes	NA	No	8	NA
Dowco.com	200-1024 Ridgeway Ave.	Coquitlam	604-664-1044	www.dowco.com	webmaster@dowco.com	1995		128	X2	Yes	Yes	No	10	0-4 hours
Imaginet Communication Grp.	200-425 Carrrall St.	Vancouver	604-662-8332	www.imag.net	info@imag.net	1996	15:1	***********	X2	Yes	Yes	No	6	<15 minutes
In2net Network Inc.	501-938 Howe St.	Vancouver	604-601-2118	www.in2nett.com	into@in2net.com	1996	8:1	33	NA	Yes	No	No	4	Immediate
Infomatch	143-9632 Cameron St.	Burnaby	604-421-3230	www.infomatch.com	accounts@infomatch.com	1992	14:1		NA	Yes	NA	No	3	NA
Infoserve Tech, Ltd	5438 Imperial St.	Burnaby	604-482-8238	www.infoserve.net	info@infoserve.net	1993	10:1		NA	No	No	No	2	NA
Internet Gateway	800-889 W. Pender St.	Vancouver	604-654-6088	www.intergate.bc.ca	staff@intergate.bc.ca	1995	10:1		X2/Rock		No	No	10	2 min.
Internet Junction	1-4216 25th Ave	Vernon	888-944-INET	www.junction.net	info@junction.net	1994	15:1	-	NA	Yes		No	5	NA
Internet Lightspeed	210-6833 Sellers Ave.		604-482-1190	www.lightspeed.bc.ca	info@lightspeed.bc.ca	1992			X2/Rock	000000000000000000000000000000000000000	Yes	No	4	Immediate
	201-2525 Manitoba Street	Burnaby	604-257-9400		sales@portal.ca	1994	NA	56	Rock	Yes	Yes	NA	NA	<60Min
Internet Portal Services Intouch InterNet		Vancouver		www.portal.ca	info@intouch.bc.ca	1995		and specimens	NA	No	No	No	3	Immediate
	3448 Cambie St.	Vancouver	604-875-6306	www.intouch.bc.ca		1996		56	X2	Yes		No	7	10 minutes
Logical Link Comm. Inc.	NA	V	403-263-7573	www.logicallink.com	b.layton@logicallink.com			56				No	5	5 min.
Lynx Internet	508-938 Howe St.	Vancouver	604-331-2511	www.lynx.bc.ca	info@lynx.bc.ca	1995	CARROLL STATE OF THE PARTY OF T	AND DESCRIPTION OF THE PERSON	X2 NA	No	No	No	N/A	1 hour
MacSolutions Network	NA	New West.	604-893-0663	www.msn.bc.ca	sales@msn.bc.ca	1994	CONTRACTOR OF STREET	33		No	No		SHADOOD CALEDOD ON	5 mins.
Maximum Internet	101-5007 47A ave.	Delta	604-940-8921	www.max-net.com	admin@max-net.com	1995			NA	No	No	No	6	
MaxNet	510-1190 Melville St.	Vancouver	604-687-5200	www.maxnet.ca	sales@maxnet.ca	NA	NA	NA	NA	Yes		No	NA	NA .
MDI Internet Ltd.	700-1080 Howe St.	Vancouver	604-602-9168	www.mdi.ca	info@mdi.ca	1989		56	Rock	Yes		No	3	Same day
Mortimer Online	120-2465 Beta Ave.	Burnaby	604-294-2995	www.mortimer.com	into@mortimer.com	1995			NA	No	No	No	3	<10 minutes
Netcore Professional Services	103-8080 Anderson Rd	Richmond	604-272-2624	www.npsnet.com	info@npsnet.com	1992	managin resource	e anno de anno de la constante	NA	No	NA	No	5	NA
Planeteer	210-11180 Voyageur Way	Burnaby	604-606-7620	www.planeteer.com	info@planeteer.com	1994		28	NA	Yes	erreserving true	No	3	15 min.
Prism Internet	120-8740 Beckwith Rd.	Richmond	604-270-7135	www.prismnet.bc.ca	info@prismnet.bc.ca	NA	8:1	56	Rock	Yes		No	5	Immediate
Radiant Communications	1420 W. Georgia St.	Vancouver	604-257-0500	www.radiant.net	info@radiant.net	1996		56	Rock	Yes		Yes	4	5 minutes
RandomLink InterActive Inc.	1376 Seymour	Vancouver	604-602-1191	www.randomlink.com	info@randomlink.com	1994	5:1	56	X2/Rock	Yes	No	No	2	Immediate
Rapidnet Technologies	3-31018 Peardonville Rd.	Abbotsford	604-855-7638	www.rapidnet.net	info@rapidnet.net	1995	NA	NA	NA	No	No	No	NA	NA
Skybus Internet	L8-601 W Broadway	Vancouver	604-482-1238	www.skybus.com	sales@skybus.com	1995	15:1	28	NA	No	No	No	6	Immediate
SmarttNet	114-3855 Henning Dr.	Burnaby	604-473-9700	www.smartt.com	sales@smartt.com	1995	11:1	56	X2	Yes	Yes	Yes	10	10 minutes
Sympatico Internet Service	NA	NA	800-773-2121	www.bc.sympatico.ca	service@bc.sympatico.ca	1996	NA	56	NA	No	No	No	NA	NA
The InterNet Store	3448 Cambie Street	Vancouver	604-875-6306	www.intouch.bc.ca	gninow@intouch.bc.ca	1995	12:1	56	X2	NA	Yes	No	4	immediate
The Net Idea Telecomm. Inc.	NA	Nelson	250-352-3512	netidea.com	sales@netidea.com	1995	1:1	56	Rock	NA	NA	NA	8	1 hour
Ultranet Canada	250-780 Beatty St.	Vancouver	888-264-2222	www.ultranet.ca	info@ultranet.ca	1996	12:1	56	NA	No	No	No	3	15 min
Uniserve Online	27009 Fraser Hwy	Aldergrove	604-856-6281	www.uniserve.com	info@uniserve.com	1988		128	Rock	Yes		No	15	NA
Wizard Tower	14503-104th Avenue	Surrey	589-0037	tower.ca.gateone.com	sales@tower.ca	1997	each companies continued		NA		Yes		NA	Immediate

INTERNET SERVICE PROVIDERS: The ISPs listed here responded to our reqest for information by the submission deadline. If information listed is incorrect or if you operate an ISP and would

like to be included in our database (published semi-annually in TCP and other Canada Computer Paper publications), please http://www.tcp.ca update or fill out an online form at our Web site.

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Both plans include all of the following: Email Autoresponders, Email Forwarding, Anonymous FTP, MS FrontPage™ Support, Detail Usage Statistic, Unlimited FTP Updates, Domain Name Registration*, Account "Control Panel", Search Engine Registration, Info Request Form, Online Bulletin Board, Guest Book

*US\$ 100 InterNic fees not included

Internet Service Providers for B.C.

Plans			to biz serv.
A: No startfee, includes kit, \$5/mo. + hourly charge, no Web storage	B: No no, includes kit, \$18.88/mo for unlmtd hrs, no Web storage	C: 128k dedicated ISDN, no startfee, \$395/mo for unlmtd, no Web storage	PMI
A: No startfee, includes kit, \$40/mo/unltd hrs, includes Web storage			PDMI
A: Simply mail, no startfee, includes kit, \$8/mo/6 hr, \$1.50/hr over	B: Basic, no startfee, includes kit, \$15/mo/30 hr, \$1.50/hr over	C: Extra, no startfee, includes kit, \$20/mo/60 hr, \$1.25/hr over, incl. Web storage	PDMI
A: \$25 startfee, Incl. kit, \$19.95/mo/50 hr, \$1/hr over	B: Corporate, \$150 startfee, incl kit, \$29.95/mo/50 hr, incl Web stor.	C: ISDN, \$25 startfee, incl. kit, \$395/mo/unimtd	PDMI
A: No startfee, \$15.95/mo/20 hr, \$.95/hr over			PDMI
A: 33.6K, no startfee, incl. kit, \$19.95/mo/unlmtd, incl. Web storage	B: 56K, no startfee, incl. kit, \$29.95/mo/unlmtd, incl Web storage		PDMI
A: \$25 startfee, incl kit, \$9.95/mo/5 hr, \$1.95/hr over, incl. Web storage	B: \$25 startfee, incl kit, \$19.95/mo/30 prime hrs, incl Web storage	C: \$25 startfee, incl kit, \$24.95/mo/50 prime hr, \$0.95/hr over, incl. Web storage	PMI
A: No startfee, kit avail on demand, \$18.95/mo/unlmtd, incl Web storage	B: No startfee, kit avail on demand, \$35.95/mo/unlmtd, inc. Web stor.		PMI
A: No startfee, \$24.95/mo/100 hr, incl Web storage			NA
A: No startfee, no kit, \$19.95/mo/NA, incl. Web storage	B: No startfee, no kit, \$18.95/mo paid quarterly, incl Web storage	C: No startfee, no kit, \$17.95/mo paid semi-annually, incl Web storage	PDMI
Please contact CONNET for details of plans and services			PMI
Please contact Cybersurf for details of plans and service			PDMI
A: \$24.95/mo/unltd, incl Web storage			NA
A: \$39.95 startfee, incl kit, \$19.95/mo/50 hr, \$1.50/hr over, incl Web stor.	B: \$39.95 startfee, incl kit, \$27.75/mo/75 hr, \$1.50/hr over, incl Web stor.	C: \$39.95 startfee, incl kit, \$35.95/mo/100 hr, \$1.50/hr over, incl Web storage	1
A: Basic email, incl kit, \$5/mo/8 hr, \$.75/hr over, incl Web storage	B: \$20 startfee, incl kit,. \$9.95/mo/50hr, \$0.75/hr over, incl Web stor.	C: Inc. kit, \$19.95/mo/NA, incl Web storage	PDMI
A: \$19.95 startfee, incl kit, \$9.95/mo/10 hr, \$.99/hr over	B: 128K, \$19.95 startfee, incl kit, \$49.95/mo/100 hr, \$.99/hr over	C: 128K, \$19.95 startfee, incl kit, \$59.95/mo/100 hr, \$.99/hr over, incl Web storage	Р
A: No startfee, kit incl, \$9.95/mo/5 hr, \$1.85/hr over, incl Web storager	B: No startfee, incl kit, \$19.95/mo/30 prime hr, \$.95/hr over, incl Web stor	C: No startfee, kit incl, \$24.95/mo/50 prime hr, \$.95/hr over, incl Web storage	PDM
A: \$25 startfee, incl kit, \$20/mo/75 hr, \$1/hr over, incl Web storage	B: \$25 startfee, incl kit, \$15/mo/30 hr, \$1/hr over, incl Web storage	C: Business: \$25 startfee, incl kit, \$50/mo/75 hr, \$1/hr over, no Web storage incl.	PDM
A: No startfee, \$13.91/mo/60 hr, \$1.20/hr over, incl Web storage	B: No startfee, \$19.95/mo/120hr, \$1.20/hr over, incl Web storage		DM
A: No startfee, inc kit, \$19.96/mo/45 hr, \$1/hr over, incl Web storage	B: No startfee, incl kit, \$14.96/mo/25 hr, \$1/hr over, incl Web storage	C: No startfee, incl kit, \$9.96/mo/12 hr, \$1/hr over, incl	PDM
A: No startfee, incl kit, \$19.50/mo/100 hr, no Web storage incl	B: No startfee, incl kit, \$29.95/mo/100 hr, incl Web storage		PDMI
A: \$50 startfee, \$9.95/mo/10 hr, \$2/hr over, incl Web storage	B: \$50 startfee, \$19.95/mo/30 hr, \$1/hr over, incl Web storage	C: \$50 startfee, \$29.95/mo/60 hr, \$1/hr over, incl Web storage	PDMI
A: Incl. kit, \$19.95/mo/unlmtd,			PDMI
Please contact Internet Portal for details of plans and services			PMI
A: No startfee, \$29.95/mo/unImted (paid quarterly), incl Web storage	B: No startfee, \$9.95/mo/6pm Fri-6pm Mon., incl Web storage	C: No startfee, \$15.95/mo/Mon-Fri, incl Web storage	PDMI
Please contact Logical Link for details of servies and plans			PMI
A: \$25 startfee, incl kit, \$20/mo/150 hr,	B: \$25 startfee, incl kit, \$30/mo/unlmtd	C: ISDN: \$25 startfee, incl kit, \$40/mo/100 hr	PDM
Please contact MacSolutions for details of services and plans			PMI
A: \$25 startfee, incl kit, \$29.95/mo/NA	B: \$25 startfee, incl kit, \$19.95/mo/30 hr,	C: \$25 startfee, incl kit, \$5/mo/NA	PM
Please contact MaxNet for details of services and plans			PDMI
A: No startfee, incl kit, \$18.88/mo/150 hr, \$1/hr over, incl Web storage	B: Business: \$80 startfee, \$19.88/mo/NA, incl Web storage	C: Business: No startfee, \$38.88/mo/NA, incl Web storage	PDMI
A: No startfee, \$14.91/mo (paid annually)/548 hr total, incl Web storage	B: No startfee, \$16.50/mo (paid 6 mo), 274 hr total, incl Web stor.	C: No startfee, \$19.50/mo (paid 2 mo.)/100 hr total, incl Web storage	PDMI
A: \$39.95 startfee, incl kit, \$34.95/50-hour block, incl Web storage	B: \$39.95 startfee, incl kit, \$9.95/mo/10 hr, \$1/hr, incl Web storage	C: \$39.95 startfee, incl kit, \$19.95/mo/25 hr, \$1/hr over, incl Web storage	PDMI
A: \$24.95 startfee, incl kit, \$9.95/mo/25 hr, \$.75/hr over, incl Web stor.	B: \$24.95 startlee, incl kit, \$19.95/mo/75 hr, \$.75/hr over, incl Web stor.		PDMI
A: \$25 startfee, incl kit, \$18.95/mo/100 hr, \$.95/hr over, incl Web stor.	B: Incl kit, \$24.95/mo/150 hr, \$.95/hr over, incl Web storage	C: \$25 startfee, no kit incl, \$29.95/mo/unlmtd, incl Web storage,	PDMI
A: \$25 startfee, incl kit, \$19.95/mo/150 hr, \$1/hr over, incl Web storage	B: ISDN: No startfee, \$29.50/mo/100 hr, \$1/hr over, incl Web storage	C: Ded. ISDN: \$25 startfee, \$380/mo, incl Web storage	PDMI
Please contact RandomLink for details of services and plans			PMI
A: \$25 startfee, incl kit, \$9.95/mo/10 hr, \$1/hr over, no Web storage incl	B: \$25 startfee, incl kit, \$14.95/mo/30 hr, \$1/hr over, incl Web stor.	C: \$25 startfee, incl kit, \$21.95/mo/60 hr, \$1/hr over, incl Web storage	PDMI
A: No startfee, incl kit, \$19.95/mo/70 hr, \$1/hr over, incl Web storage	B: Business: \$50 startfee, \$49.95/mo, incl Web storage		PD
A: No startfee, \$10/mo/15 hr, \$1/hr over,	B: No startfee, \$22.50/mo/100 hr, \$1/hr over,	C: No startfee, \$30/mo/150/hr over, \$1/hr over,	PMI
Please contact Sympatico for details of services and plans	2.100 3001100, 4222001100 100 111, 41111 3101,	5. No statistics, 455 may 155 m 575, 4 mm 575,	D
A: (33.6) incl kit, \$15.95/mo/100 hr/3 mo, incl Web storage	B: (33.6) no startfee, incl kit, \$19.95/mo/200 hr/3 mo, incl Web stor.	C: (X2 or 33.6), incl kit, \$24.95/mo/300 hr/3 mo, incl Web storage	1
A: \$25 startfee, \$19.95/mo/30 hr, \$1/hr over,	B: \$25 startfee, \$29.95/mo/60 hr, \$1/hr over.	C: \$25 startfee, \$34.95/mo/100 hr, \$1/hr over,	PMI
A: Email only, \$10 startfee, incl kit, \$4.95/mo over	B: \$25 startfee, incl kit, \$19/mo/80 hr, \$1/hr over, incl Web storage	C: \$10 startlee, incl kit, \$24.95/mo/80 hr, \$1/hr over, incl Web storage	PD
A: \$25 startfee, incl kit, \$8.95/mo/10 hr, \$1/hr over, incl Web storage	B: \$25 startfee, incl kit, \$24.95/mo/120 hr, \$.50/hr over, incl Web stor	VI 4 19 Starting the high parties into the start the storage	PDMI
A: No startfee, \$15/mo/30 hr, \$1/hr over, incl Web storage	B: Corp.: \$60 startfee, incl kit, \$90/mo/unlmtd, \$1/hr over, incl Web stor.	C: No startfee	PDMI
The tro station, \$10 more in \$10 more in the state storage	5. 55/p., \$55 Startion, there is, \$50/110/utilitite, \$1/11 5761, file \$760 Stor.	o. Hu startiou,	T DIVII

LEGEND: NA=Information not provided by the Internet service provide. **Business to business services:** P=Web page design. D=Web site design. M=Site management. I=Intranet consulting.

READERS: Please note that due to space restrictions, we can only include information on a few plans for each ISP. A more complete list of plans and service details can be found in the *TCP* online ISP database atour Web site.

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■ SOFTWARE

Home suite home

Microsoft's affordable bundle

BY ROSS MACDONALD

Between Microsoft, Lotus, Corel and many lessers, the practicality of selling multiple application packages in some kind of office suite has been both well received and well established. After all, office suites constitute nothing less than a boon for consumers who get four or five of a publisher's most pragmatic programs for a fraction of the cost of buying each separately.

Home Essentials 98

From: Microsoft Corp.
320 Matheson Blvd., W.
Mississauga, ON, L5R 3R1
Tel: 800-563-9048
http://www.microsoft.com/canada
Estimated street price: \$149

This makes for a winning formula for publishers too—nothwithstanding what might be seen as lost revenues—because it's arguable that many consumers might not have purchased all the programs found in a suite if they'd had to pay the individual costs. They might have gone without, say, a database, or worse, chosen an alternative brand.

However, getting your software in a bundle from a single publisher means you're not necessarily getting the individual applications that best suit each of your needs or even tastes. It is not uncommon to come across someone who, for example, likes Lotus' WordPro better than Microsoft Word, but who likes Microsoft's PowerPoint better than Lotus' graphics program.



But again, there's a positive to counter even that drawback. The common interface of the applications put into office suites is definitely a positive, as are the special links between applications that make it eminently practicable to move around between them, and to move items from one application to another.

In all of this there's an oft overlooked point that office suites are called office suites for a very good reason: they're constructed to address the most common tasks demanded of the typical business computer. The word processor produces very slick documents, the graphics program makes fabulous bar charts, the database keeps track of your inventory and the spreadsheet keeps track of your financials.

Unfortunately, there's nothing in there to keep track of your family. And, equally unfortunately, even a \$1,000 business bargain is a hefty price to pay for a suite of applications that are highly unlikely to see much use beyond the most rudimentary household tasks.

Which is where Microsoft comes into the picture with this excellent suite of home-oriented applications that sells for under \$150. Microsoft apparently consulted the results of a survey to determine the top 10 home PC uses in terms of "percentage of PC owners performing [a certain] activity" and consequently tailored this package to address the findings.

The result is Home Essentials 98, six and a half of Microsoft's very popular program in a five-CD-ROM set containing full and current versions of Word 97, Money 98, Works 4.5, Greetings Workshop, Encarta 98 and Entertainment Pack: The Puzzle Collection. The half (above) refers to the one month free trial offer for the Microsoft Network (MSN) online service.

Each program can be loaded or deleted independently of the others, so you can choose what you want when you want it and modify your installation at any time later.

First, I should mention that I particularly like Home Essentials for including Works because I'm an inveterate Works user and have been ever since I got my first PC compatible in 1990.

I find that the simple yet intelligent features of Works' integrated word processor, spreadsheet and database more than fulfill my digital desires. There's plenty of formatting, fonts galore and enough control over the final result that I often wonder why so many people with undemanding requirements like mine want to tie up their computer resources with a full version of Microsoft Office. Works also contains a communications component for sending and receiving documents through the modem.

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"I would like to let you know that I think this is an excellent service."

"Hi Buy&Sell gang...fabulous feature, even better if I sell my carl Keep up the good work."

"I'd like to commend you people on all the hard work that it must have taken to set all this up. I have been using the Buy&Sell for a good number of years, and now just recently with my home PC. I have sold all the stuff that I have advertised in the Buy&Sell. Keep up the good work."

"Thanks, I was able to find what I was looking for during the period I was subscribed....
Very nice layout for the site. Keep up the good work!"

"Just a quick note to say that your website is one of the 'friendliest' I've just used. I made a mistake on my ad and it was easy to figure out how to change it. Also browsed the car ads and found one that I was interested in. Great job."

"Just thought that I would quickly write and tell you how impressed I was with Buy&Sell on-line. It's amazing how many phone calls I received regarding the ping pong table I was selling. There were so many calls that it sold that Thursday night.

Anyway, once again - thank you.

Your system is very simple to use
and it works!"



SOFTWARE

The unfortunate thing about the gradual maturation of Works is that Microsoft releases each new version in a more and more cumbersome incarnation as they fill it up with virtually hundreds of templates and those annoying "wizards" that I'm sure are appreciated by only the least experienced computerist. My favorite version was the last one before Windows 95, but like everyone else, I have succumbed to Bill Gates' siren song and steered by computer heavily onto those rocks too.

The latest version of Works in Home Essentials 98 is very much like the previous "for Windows 95" version, but with the addition of Internet Explorer, more templates and many more clip art. A good, solid all around program and well worth the purchase of this bundle alone.

Word, on the other hand, is Word. And words alone can't express the nuances of the love and hate relationship so commonly arising in Word users. It's super sophisticated and super advanced to the point that most home users are unlikely to ever tap the capabilities of this word processing/publishing environment. Home Essentials comes with a 359-page manual. The fact that 274 of them are devoted to Getting Results with Microsoft Word 97 ought to give the unversed some idea of just how powerful this word processor is.

Microsoft continues to publish Money as a home-level bookkeeping program in competition with other more popular brands. If you're already using one of those, you may choose not to install this. However, if you like the idea of computerizing the household accounts and just never got around to it, the fact that Money is included among the Home Essentials gives you a perfect opportunity to learn a basic and competent program that will organize your personal finances.

I received a copy of the deluxe version of Greetings Workshop just before Christmas and found it to be a very comfortable program for making greeting cards, invitations, posters and banners, labels and such. However, the thousands of graphics and hundreds of photos tend toward the banal. The fact that you can import graphics (and photos too if you have a color scanner and Microsoft's companion product Picture It!, reviewed recently in TCP) injects some much needed flexibility to make the Greetings Workshop really work as long as you're willing to put in the time.

But don't forget that printing even a few full-color greetings is going to tax your wallet mightily as you head to the store for more printer cartridges. Nicely though, among several features, is the option to simply create electronic greetings for transmission through email or the Internet.

Encarta 98 is the extremely popular CD-ROM encyclopedia Microsoft introduced about five years ago. My criticism then was that it focused rather toward the simpler presentation of information, turning to Funk & Wagnall's perpetual supermarket encyclopedia to reap its reference roots.

Things have gotten somewhat more sophisticated, however, and, though still leaning toward an elementary level, Encarta has very friendly interfaces and a comprehensive range of information amenable to most family research situations. The deluxe version of Encarta includes extra features like

Continued on page 124



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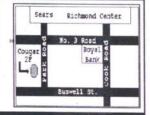
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Two paths to Windows CE 2.0

Second-generation devices from NEC and HP

BY GEOF WHEELWRIGHT

icrosoft Windows CE is growing up. When the company first introduced Lit back in 1996, the operating system and the handheld computers powered by it soon were clearly of the first generation.

Windows CE 1.0 hardware was limited in its functions, did not provide support for many popular features (such as color screens or even easy printing of documents directly from the handheld) and initially appeared to leave users "underwhelmed."

And then came the announcement of Windows CE 2.0 last September. Windows CE 2.0 not only corrected many of the deficiencies of Windows CE 1.0, but also revealed a much broader vision for the operating system than had been evident.

Microsoft talked about Windows CE being used in game consoles, smart phones, TV settop boxes, DVD players and home appliances, as well as traditional "embedded applications" such as process monitoring and control, instrumentation, data collection, computer peripherals, office equipment, point-ofsale devices and telecommunications

For most users of handheld systems, however, the improvements that really counted were the enhancements to Pocket Word, Pocket Excel and Pocket Internet Explorer. The addition of a new Windows CE version of PowerPoint (which can display slide presentations created in PowerPoint 97 on a Windows 95 desktop or notebook PC) and a version of the Outlook electronic mail/information manager also promises to be a huge boost for

For makers of Windows CE 2.0 handheld computers, it has given them a whole new set of tools to create systems that can begin to rival notebook computers. Support for TrueType fonts, for example, enables higher quality, and more readable type while support for 32-bit color displays in a wide range of resolutions will make Windows CE much easier on the eye. It means that manufacturers have the option of using a broad range of displays from gray scale up to 32-bit color.

A wider range of supported processors should also mean Windows CE 2.0 systems can be more price competitive as chip makers

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vie for business. Windows CE now supports processors from ARM, MIPS, PowerPC, StrongARM, SuperH and x86 by AMD, Digital, Hitachi, IBM, Intel, Motorola, NEC, Philips and Toshiba.

Shortly after Windows CE 2.0 was announced, manufacturers began showing their Windows CE 2.0 handheld systems. They were a big step up from the pioneering 1996 offerings. Larger keyboards, optional color displays, built-in modems, support for Compact Flash add-on solid state storage technology and nifty extras such as wireless communications and digital cameras all gave these new systems a high rating on the "want one" scale.

Finally, at the Winter Consumer Electronics Show (CES) in Las Vegas in January, Microsoft chief executive officer Bill Gates, made a flurry of Windows CE announcements and summed up how Windows CE 2.0 had rolled out in its first year.

"In the first 12 months, we sold a little over 500,000 of these devices," said Gates. "And, you're seeing here the large number of partners who got involved in this: Compaq, Hitachi, Sharp, Philips, Casio, HP, Ericsson, NEC, Novatel, LG, all of them bringing their unique value added to the device. And so some have unique features, and some are targeted at particular markets, but all of them are compatible in terms of learning the interface, sharing the data, and writing applications."

Gates also talked about how the machines were being used. "A lot of it has been use in the business environment," he explained. "Boeing on their factory floor takes handheld PCs, and keeps track of what's going on. They can't have a large-screen device, but the handheld PC works perfectly. In the financial area, Goldman Sachs now has it for their New York Stock Exchange trading. The Seattle Mariners take this when they go out and scout, and keep track of all the things they want to know about, prospective recruits for their team."

Gates then recounted his Fall Comdex keynote, during which a major from the U.S. Marines showed "how the handheld PC is a great communications device for the military. even in a battlefield type environment. And certainly, that and many of these other things we didn't anticipate, but when you build a powerful platform, these are the kinds of applications that emerge."

Well, he would say that, wouldn't he? But what do the rest of us think? Here's our view of a couple of the new Windows CE 2.0 systems we managed to test in late December and early January. You be the judge.

NEC MobilePro 700

I have to admit that the more I use the NEC MobilePro 700, the more I like it-which is too bad for me, since this evaluation model had to be returned. At any rate, before getting



into the pros and cons of the machine, it is worth saying a few things about what it is and how NEC is "positioning" the product.

To start with, it is slightly longer than most handhelds, weighs 675 g (1.5 lb.) and sits at the "mid-range" of the handheld PC market with a price of \$999. This price is not much more expensive than recent prices for the Psion Series 5 (which is my current handheld system of choice) and is comparable to prices of other, smaller Windows CE 2.0 systems that were also launched in November.

The price gets even better when you consider what NEC includes with the unit. To start with, the MobilePro 700 comes with an infrared communications port and a built-in 33.6Kbps modem (an extra that would typically cost you another \$100 to \$200). This is not a PC Card modem and thus does not gobble up the available PC Card slot. In addition to the PC Card slot, NEC has included a Compact Flash expansion slot so that industry standard solid state storage cards (of the type used on many digital cameras) can be used with the machine.

The monochrome display on our test model was a fairly standard 640x240 backlit affair (although NEC is expected to release a color version) that was about average in terms of readability. As with many other handhelds, there is a dedicated key on the keyboard for switching the backlight on and off to save bat-

In a couple of areas, NEC has tried to "go the extra mile" with this machine and ought to be recognized for it. To start with, the company decided to include a proper keyboard. It is one of the best keyboards you're likely to find on any handheld computer and probably explains why the machine is as long as it is.

The second extra that NEC put into the MobilePro 700 is a built-in microphone with an activation button on the outside of the machine so that you can digitally record sound into a file. Recorded sounds are stored as standard Windows .WAV files. However, using the external button for recording is a little too primitive for my liking, as it is hard to see when you are recording.

In addition to all of this, NEC provides VGA connectivity with the machine (which is only offered as an option on some other Windows CE 2.0 machines). Using a supplied cable (which unfortunately did not come with our review unit), you can apparently just plug the machine into an external display for full color presentation of any PowerPoint files you carry on the MobilePro.

In terms of performance, the 54 MHz NEC VR4102 processor seems fast enough. It never left us waiting any appreciable time for the machine to do anything (except perhaps display some graphics-heavy Web pages, in which case it was the Internet connection and not the processor that could be blamed for the slowdown).

If I had any real problem with the MobilePro 700, it would be with the battery life, particularly when using the internal modem. Even when using new batteries, I found the machine was in a big hurry to "power down" not long after accessing the internal modem to dial an Internet service provider.

When NEC gets around to refining this machine, I would suggest that it find a way to include a set second of batteries dedicated solely to the modem. While the external 14.4Kbps Travel Modem on my Psion Series 5 is far from perfect, it does come with its

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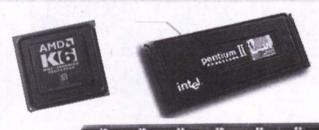
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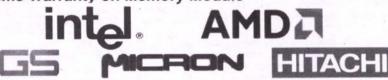






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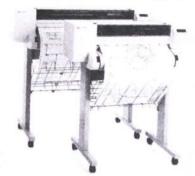
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own set of batteries and is always ready to let me send email. In common with many other Windows CE hardware designers, NEC does not yet seem to have figured out what it takes to provide a modem that will operate for any length of time on internal battery power.

My other quibble with the MobilePro 700 is the screen, which is not as clear or crisp as some of the other Windows CE 2.0 machines I have worked with. Hopefully, it was just particular to the evaluation model I was testing, but I would advise anyone planning to buy a MobilePro 700 to check out the screen first and make sure that they are happy with it.

Having said all that, the MobilePro 700 is still a pretty impressive package. With built-in modem, software for personal information management, faxing, word processing, spreadsheet and presentation of desktop PowerPoint presentations-and data compatibility with Microsoft Office—it is a pretty good deal at \$999.

My sense, however, is that this price will come down. Last year's Windows CE 1.0 systems, for example, were on sale at Christmas for less than \$500, and some of them also had built-in modems.

In addition, the relationship between the price of these palmtops and desktop PCs is also changing as the price of desktop PCs nears the \$1,000 mark. There is a danger that the idea of a PC Companion begins to lose its attraction as it reaches price parity with far more powerful desktop systems. In order to preserve the price relationship between desktop and handheld, prices of handheld systems will almost certainly have to drop.

HP 360LX, 620 LX

The same is true of HP's pricing of its new 360LX, which it is selling in Canada for \$967. At this price, the HP suffers a little by comparison to the NEC machine. While it is more compact (being about the same size as the company's previous 320LX Windows CE 1.0

system) than the MobilePro 700, it conversely does not have as good a keyboard, does not include a microphone, a built-in VGA display connector or a built-in modem.

It does, however, have the best monochrome display I have seen on a palmtop of this size. If you can live with the keyboard



(which may not be a huge issue if you're not planning to do lots of typing on the machine), then the screen may be the overriding appeal of the 360LX. It will definitely be a big draw on the 620LX "big brother" system that HP started shipping in January. That machine costs only a couple of hundred dollars more and includes a color LCD display.

HP's plan for the 360LX is to make it attractive for rolling out to corporations as a relatively low-cost universal tool for outbound employees. To make this happen, the company is shortly expected to deliver software to manage the HP 360LX as a component on the network using HP's TopTools and other Desktop Management Interface (DMI)compliant management applications.

HP boasts that its "TopTools" initiative will lower a corporation's "total cost of ownership of enterprise computing products while giving network administrators a simple, standardized means of managing the computing assets" of the enterprise. Simply put, it means that HP is aiming this little machine at a big corporate audience.

Continued on page 118

Microsoft's Pilot-like PalmPC

Microsoft is in the palm computer market. After more than a year of looking enviously while sales of 3Com's USR Palm Pilot handwriting-based pocket-computer skyrocketed to more than one million units, while systems based on Windows CE barely achieved half that number, Microsoft has applied its "embrace and extend" philosophy to the

It has embraced the idea that there's a huge market for low-cost, keyboardless, handheld computers and extended the capabilities of the Windows CE 2.0 operating system to be able to operate like a Palm Pilot. The result is what Microsoft calls the Palm PC (a name that has not endeared it to 3Com's Palm Computing subsidiary, which is apparently very ticked off that the computing giant from Redmond, Wash., has adopted a name so close to its own).

The Palm PC appears to be a clever blend of the functions of the Palm Pilot and standard Windows CE 2.0 systems. To start with, it looks a whole lot like a Palm Pilot and, at a casual glance, you might be forgiven for confusing the two machines. Like the Palm Pilot, it will do handwriting recognition and allows for the use of a docking cradle to synchronize data between itself and a desktop PC.

But that's where the similarity stops. Once you get beneath the covers, this system is all Windows CE. It runs a Note Taker application for text processing, comes with Pocket Outlook and provides support for sound recording via an on-board microphone and offers the ability to work with a modem for doing both electronic mail and surfing the Web with Pocket Internet Explorer.

For all this, however, the Palm PC is not something you'll actually be able to buy from Microsoft. It is an operating system, hardware specification and set of bundled applications Microsoft is selling to computer hardware makers as the company has done with the Windows CE systems that preceded it.

At the Palm PC launch in Las Vegas in January, seven manufacturers committed to producing palm computers based on the specification, including Philips, Samsung and Casio. At press time, trade publications were reporting that announcements were expected shortly from HP and NEC.

The one thing that has become clear is that these Palm PC units will be the cheapest new Windows CE devices yet, with prices for basic 4 MB systems come in at around US\$400. It is not yet clear whether they will steal substantial market share from keyboardbased Windows CE devices, but it is likely that officials at 3Com will be looking hard at what happens to their Palm Pilot once Palm PCs start shipping in volume.—Geof Wheelwright



Avoiding Year 2000 deadline doom

BY KEITH SCHENGILI-ROBERTS

2K, or the Year 2000 problem, is a major headache rushing upon the computer industry, and the modern world generally, due to a slight oversight by the computer nerds of past decades. The conventions for indicating time and date in computer programs and files were calculated on the basis of a "year/month/day," format, or "yy mm dd." For example, 1984/August/1 would be recorded as 84 08 01.

How to 2000

Publisher: IDG Books Worldwide Authors: Raytheon E-Systems, Dean Sims, et al ISBN: 0-7645-3101-8 Softcover, 589 pages, plus CD-ROM Price: \$69.95

When the millennium turns over, many computer systems will not be able to accept dates beginning with 00 (for the year 2000). The results will be various. Fire trucks and elevators fitted with diagnostic chips that shut the systems down unless they receive acceptable performance data will simply become

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inoperable when the year 2000 rolls around. Accounting systems and databases of most Fortune 500 companies, educational institutions and government agencies will generate errors or crash, potentially shutting down everything from electrical utilities to banks. It goes on, and on, and some of the scenarios are pretty frightening.

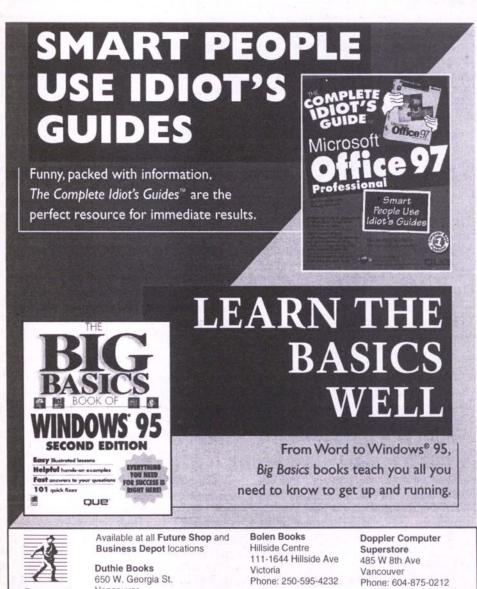
Given the billions of lines of programming code and trillions of files contained in Y2K-sensitive systems, the task of fixing this mess is literally gigantic. Although the problem has been known for over 20 years, many enterprises delayed spending time and money to fix it—until recently.

Many analysts now claim there is simply too much work, and too few qualified people, to solve this massive problem in the time available between now and Year 2000. Which brings us to IDG's How to 2000.

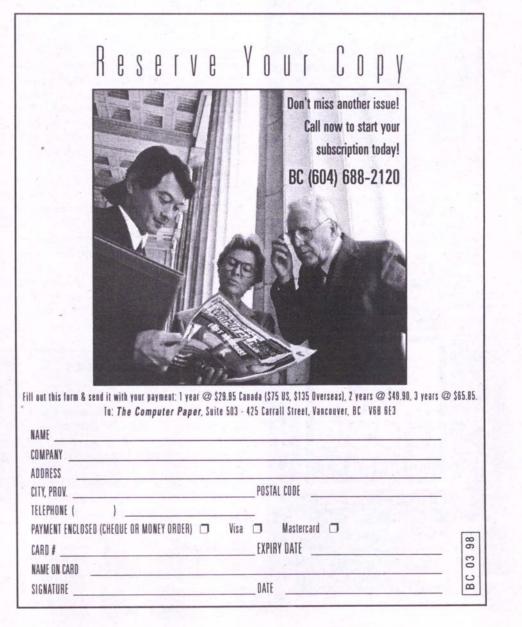
This "risk management" manual is the distillation of the authors' considerable experience curing the Year 2000 problem in large computer systems. The book is laid out as a working plan for virtually any organization with a Year 2000 problem. It deals with analyzing exposure to risk, and organizing the best solution possible. Rather frighteningly, it

Continued on page 118





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Bringing your old PC up to speed

Illustrated guide offers sage advice on upgrading

BY KEITH SCHENGILI-ROBERTS

re you finding your computer isn't quite as zippy as the latest model? Feeling pinched for space on your current hard drive? Do you feel your computer is lacking some the equipment—like a CD-ROM drive-you require to do the job you need? Well, maybe it's time to think about trading in your old machine for a new one before it becomes nothing more than a big paperweight on your desk.

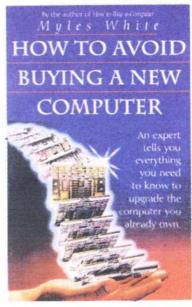
How to Avoid Buying a New Computer

Author: Myles White Publisher: McClelland & Stewart Inc. Tel: 416-598-1114 ISBN: 0-7710-8830-2 Softcover 296 pages 1997 Price: \$19.99

A better solution might be to take a peek at this book by Myles White, which tells you what you need to know to simply update the components on your computer in order to bring it up to speed.

White is a Toronto-based technology writer who has written in the past for the Canada Computes! publications and currently writes for the Toronto Star. White takes the approach that most 486-era and later computers are salvageable by simply upgrading or replacing some components. Easy enough to suggest, but most people can be forgiven for thinking they shouldn't touch the insides of their computer-with all of the competing hardware standards that have appeared over the years, who

but a trained computer professional would know what they're doing, right? Wrong.



White takes the reader through a straightforward, no-nonsense tour of the what makes your computer tick, and reduces such mindboggling computer hardware terms and acronyms like Motherboard, SCSI and CPU down to a level comprehensible to mere humans. His sometimes grouchy sounding approach (such as calling Microsoft's Plug and Play standard Plug and Pray) will be refreshing to those readers who feel too many computer writers today buy into the latest compu-catchphrases rather than examining how such standards actually work in the real world.

A good example of this can be seen in the section devoted to upgrading the memory on a computer-probably the most common of upgrades performed on any machine. Anybody who has been around computer hardware for any length of time will know there has been a dearth of different memory chips you can get: 30- and 72-pin SIMMS, 168-pin DIMMS, which can come in a variety of different speeds, memory size and internal configurations. White patiently goes through this material and makes some good recommendations on what to look for when buying more memory for your computer.

This section includes lots of helpful pictures—at times useful as a "field guide" to common computer memory types-followed up by some truly useful illustrations on how to get out your old memory chips and how to put new ones back in. It is designed to reassure the compu-nervous that they can update their computer themselves.

White's no-nonsense approach to his subject matter makes it a refreshing read, and also makes it easy for the computer hardware beginner to get started. As with almost any book of this type, it lags somewhat behind the current state of the technology, and there is little to no mention of such very recent developments as DVD drives or 3D video cards, but this book will satisfy the majority of people who want to upgrade their systems. Also, there has been a large drop in the prices of whole computer systems in the past few months, making the purchase of a new system more economically feasible than upgrading an old one. But for those people who are looking for a good guide to upgrade their system, this book is hard to beat.

Rating: Information content: ***1/2 Readability: **** Intended for: Beginner - Intermediate Overall Rating: ****

Avoiding Year 2000 deadline doom Continued from page 117

seems many of the large organizations we depend on are having to wrap their minds around the fact that not everything can be fixed in time, and they will have to perform a "triage" process, fixing highest priority items first, and delaying others. The authors suggest a nine-stage process: Planning and Awareness, Inventory, Triage, Detailed Assessment,

Resolution, Test Planning, Test Execution, Deployment, and Fallout.

Many enterprises likely have already done at least some of the initial steps. How to 2000 will be very helpful in putting the Y2K process in a logical framework, and helping to define what remains to be done.

Perhaps not surprisingly, Raytheon E-Systems also offers onsite Y2K training and technical services. After reading this book,

enterprise managers may be only too eager to do whatever is necessary to ensure they beat the looming Year 2000 deadline.

In the aftermath of the ice storm that devastated Quebec and parts of Ontario, Canadians have learned the consequences of a modern service we take for granted suddenly being yanked away. How To 2000 is a blueprint for avoiding the great ice storm's computer equivalent.

Two paths to Windows CE 2.0

Continued from page 116

If it wants to succeed, it will also have to do something about PC Card modem power consumption. Sticking a PC Card modem in this machine sucks battery power out of it faster than a chainsaw soaks up gas. You really need to have the 360LX plugged into an electrical socket to do any extended amount of email or Web browsing using an average PC Card modem. And that's unfortunate as it really eats into the system's remote computing capabilities. HP is not, however, alone in facing this problem as NEC's problems with power consumption on its internal modem suggest.

So, as far as I'm concerned, the 360LX is an "almost" handheld. The keyboard is almost good enough, the screen almost makes up for the deficiencies of the keyboard, the expansion options are almost sufficient. But for almost \$1,000, almost may not be enough.

A lot more impressive sounding is HP's new 620LX. It only costs a few hundred dollars more than the 360LX, but includes 16 MB of RAM, a color display (capable of showing 256 colors on its high-contrast screen) and a voice-recorder feature with a built-in microphone and voice-compression engine devel-

In addition, the email functions on-board the 620LX promise support for binary and

other attachments. As well, HP appears to have remedied its keyboard problems by using a larger and wider-spaced keyboard and has included "quick-start" keys for easy access to frequently used applications.

While it has not gone as far as including a VGA cable in the package, the 620LX does allow for the attachment of an optional "VGA-out card" for on-the-road presentations. HP says it provides up to 800x600 pixel resolution for full-colour, full-size VGA output of Microsoft PowerPoint presentations or Excel spreadsheets.

This unit arrived as we were going to press, so expect a detailed evaluation of this system next month.

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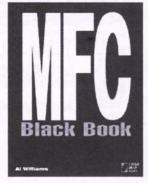
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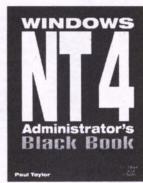


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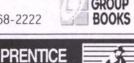
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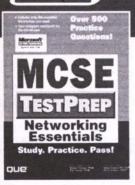
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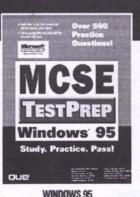


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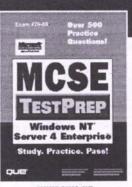


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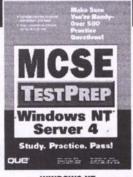
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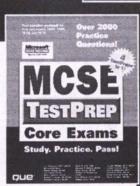


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MAC ARENA

PowerBook G3 a workstation-class notebook

BY PETER MILBURN

Citius, altius, fortius... faster, higher, stronger

The motto is an apt description of Apple's PowerBook offerings since re-emerging into the portable computing market just over a year ago. Only eight months after the introduction of the 3400 series, the PowerBook G3 now ranks as the new speed champion of notebooks. As a matter of fact, it is capable of outperforming many desktop computers on the market today.

The case design of the PowerBook G3 is virtually identical to the older PowerBook 3400. However, the portable G3 model-with its 250 MHz microprocessor—is about twice as fast as the older 3400 model running at 240 MHz. Why is there such a huge increase in performance with only a nominal increase in CPU clock speed?

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PowerBook G3

CPU: 250 MHz PowerPC 750 RISC Memory: 32 MB RAM, expandable to 144 MB, 4 MB ROM, 50 MHz system bus

Storage: 5 GB ATA hard drive, 20x CR-ROM drive, 1.44 MB floppy drive

Display: 12.1-inch, SVGA 800x600 pixels, backlit active matrix

Expansion: Two PC Card slots (Type I, II, III) includes zoom video, SVGA external monitor, wireless IrDA port, IrTalk, SCSI, Serial, ADB

Other: Ethernet, 33.6Kbps modem, 4 speakers, microphone, 16-bit audio, lithium ion battery Size: 6.6x29.3x24 cm

Weight: 3.3 kg

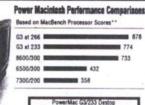
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Look Ma... no fans!

The reason is twofold. First, Apple is using a third generation (hence G3) microprocessor from IBM and Motorola, called the PowerPC

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MAC ARENA

750. (Incidentally, the G3 designation also refers to the optimized PowerPC 604e codenamed "Mach 5.").

The PowerPC 750 is also being used in Apple's newest desktop models, but its design makes it ideal for portable computing devices. At the same clock speed the PowerPC 750 has less than 1/7 the electrical power requirements and is only about 1/3 the die size of a Pentium II-while offering at least the same level of performance. This high performance to power consumption ratio is a major reason why PowerBooks have taken a substantial performance lead over the competition in the portable market.



Also, the PowerPC 750 is the first of the PowerPC family of microprocessors whose design has been optimized for running the Mac OS.

The second reason for the phenomenal speed increase of the PowerBook G3 over the 3400 models is the implementation of a new high-speed Level-2 caching technology called "backside cache." (Cache is a relatively small amount of high-speed memory located between the microprocessor and main memo-

Earlier generations of Level-2 cache used to be located on the main logic board, where the rate of access was limited by slower system bus speeds. Instead, the PowerBook G3 has 512KB of backside cache located on the processor card. The dedicated bus between the



cache and CPU runs at 125 MHz instead of the slower system bus speed of 50 MHz. As a result, the PowerPC 750 spends more time processing and less time waiting for instruc-

MHz becomes more meaningless

Megahertz ratings have always been a predominant way of measuring computer performance. However, the newest system designs based around the G3 amply demonstrate that more megahertz doesn't always correlate with higher performance.

With such high performance levels it is easy to overlook some of the inconveniences of the PowerBook G3. For starters it has the same size and weight specifications as the older 3400 model. With a weight of over 3 kg (6.6 lb.), be prepared to get a good workout if you plan on hauling it about frequently. The video-out port still only supports video mirroring, so if you hook up to an external monitor you aren't capable of tiling screen images

the way you can with Apple's desktop systems. A minor but annoying design feature is the use of plastic (instead of metal) hinges on the covers over the expansion ports. They tend to pop off easily, so if you lose them it could end up being an annoyance to replace them.

The bottom line

The PowerBook G3 is targeted at "price-is-notan-issue" consumers who need uncompromising performance capability in a mobile computer. It is the first notebook to truly offer workstation levels of performance to those who require it. In a few months it will be interesting to see what performance levels are achieved by the next-generation PowerBooks code-named Main Street and Wall Street.

Peter Milburn can be reached via email at elite@cadvision.com.

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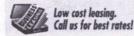
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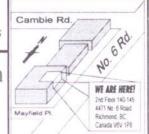
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Weaving your own Web site: Part XXX

HTML 4.0: Part I

BY KEITH SCHENGILI-ROBERTS

This past December, the World Wide Web Consortium (W3C), the standards-setting organization for the Web, finally ratified the HTML 4.0 standard. Until this point, the specification had been in draft form, giving the Web browser developers a chance to incorporate some of their newly recommended tags. The release of the final version of this specification has added a number of new tags that Webmasters will soon be able to play with. This and the next article in this series will look at the some of the new tags and features to look for.

At the time of writing, not all of these tags have been fully implemented within Internet Explorer or Netscape Navigator, but because both Microsoft and Netscape Communications are members of the W3C, they are expected to implement the new tags within over the course

A new way of presenting forms

The recent HTML 4.0 specification proposes three new forms-related tags: <FIELDSET>, <LEG-END>, <LABEL> and <BUTTON> tags. The first two tags are designed primarily to add extra formatting components to forms. The <LABEL> tag makes form options selectable from the user's keyboard and the <BUTTON> tag allows the Web author to add any text she wants to a buttonincluding the ability to add images to it.

The <FIELDSET> and <LEGEND> tags are always used in conjunction with each other the <FIELDSET> tag is designed to let the Web author group thematically-related inputs together, and the <LEGEND> tag is designed to add a title to the fieldset. The idea is to surround a bunch of checkboxes or radio buttons in a fieldset, which draws a line that encompasses the whole group of selectable options. The <LEGEND> tag simply provides a title for the grouping, which is displayed, and this title is displayed within the border drawn by the <FIELDSET> tag. Here's some sample code that will help explain how these two tags are supposed to work:

<FORM ACTION=".." METHOD=POST> <FIELDSET>

<LEGEND ALIGN="TOP">SOME INFO</LEGEND>

STUFF #1: <INPUT TYPE=RADIO NAME="STUFF" VALUE="1">

STUFF #2: <INPUT TYPE=RADIO NAME="STUFF" VALUE="2"> </FIELDSET>

</FORM>

<FIELDSET> does not have any attributes, but <LEGEND> has two: ALIGN and ACCESSKEY. The ALIGN attribute takes one of four possible values: BOTTOM, LEFT, RIGHT and TOP. These set the position of the legend with respect to the fieldset. The ACCESSKEY attribute signifies the

keyboard key that is to be associated with a particular < LEGEND>. When the ACCESSKEY is specified, it allows the user to choose a particular form from a set of forms contained on the

Continued on page 125

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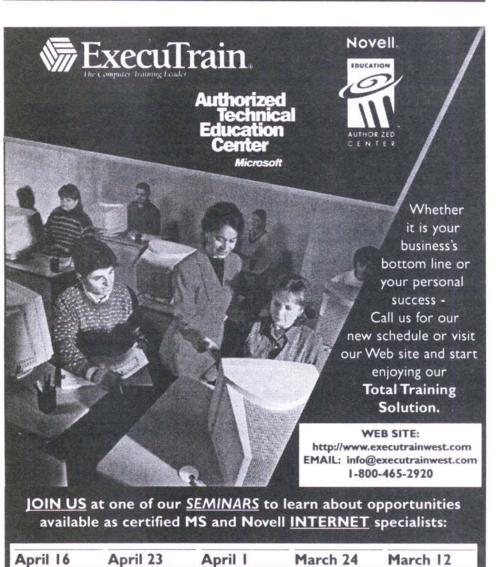
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Evolution engages and educates

BY JEAN ALLEN-IKESON

hat do you get when you cross Civilization with Jurassic Park? Answer: Evolution, The Game of Intelligent Life, a new release from Discovery Channel Multimedia.

Evolution:

The Game of Intelligent Life

From: Discovery Channel Multimedia. Platform: Windows 95 Estimated price: \$55 800-762-2189 http://shopping.com

This is the best new family-oriented strategy game since Civilization II. If your kids are adept at SimCity or Civilization, they will be able to play this one alongside teens and adults who have been waiting for a great new strategy

Small wonder it's good. The executive producer for the game is Al Roireau who has worked on both Civilization and F-19 Stealth Fighter. The game is programmed by Crossover Technologies in New York and distributed by Interplay, which should make it easier to find than some Discovery titles have been in the

Evolution fits into the educational arena because players learn about biological evolution across a span of 360 million years; 170 existing, extinct and fictional species; geology (such as plate tectonics) in the format of problem solving; strategy; and the history of science.

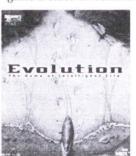
For each species (many are dinosaurs) you learn when they lived, where they feed and how well they feed in each terrain. You may want to evolve a new species that will thrive in an environment different from your current creature. It might be a predator to attack opponents or a species that will thrive in a coming era.

Like SimCity or SimFarm, "things" happen. The game may pause while continents drift and move, the climate may abruptly shift at an era change, often triggered by disasters such as asteroid impact, supernovas or huge volcanoes. Watch a comet plunge to Earth and destroy 90 percent of all living species! (You can even trig-

ger these disasters yourself, unless you are playing over a network.)

And speaking of species, they move in 3D animation and "squonk" and roar while they attack, evolve and sometimes die.

The challenge is to keep your creatures alive in a constantly changing world. Most of the game is based on accurate science but a few lib-



erties have been taken. Seven fictitious species are included, and a few real ones have been moved to different eras to "balance" the game. A few evolutionary paths lead to dinosaurs that didn't actually

evolve from them. So treat it like science fiction with a lot of science thrown it.

On the whole, Evolution provides facts and fun on species, which is summarized in the Bestiary, a large poster of creatures with detailed information on each and the evolution of life

There are a good variety of play options. In single-player mode you treat the world as your lab. You can also play against one of the five scientists included in the game: Mendel, Darwin, Huxley, Cope or Marsh. Through the multiplayer option, you can play against up to five opponents. Multiplayer games may be played on the Internet, a LAN or via modem.

Maps wrap the entire world east and west and across both poles as well—an innovation in

Each player starts the game with a primitive amphibian, which can evolve to any of the 170 species from mice to tyrannosaurs at 30,000 years per second, which should humble teens who are moaning about the few months left of school.

Evolution will run on a minimum of a 60 MHz Pentium system, with 16 MB RAM, and 256 colors. The recommended system, however, is a 166 MHz Pentium processor with 32 MB RAM and 32-bit color. The game supports MMX technology, but will run nicely without it.

Discovery is maintaining a Web site for the game with game play tips and downloads at http://evolution.discovery.com.

Home suite home

Continued from page 113

special study aids and virtual environments that won't be found in the version included here. However, the basic Encarta still stands as a useful tool for teen-level schoolwork and this version does include the more than 2,500 links to related sites on the Web.

The final component of Home Essentials is the Puzzle Collection entertainment pack of 10 of those mind-numbing games that I've never been any good at at no time never. One has you trying to until knotted ropes-and with the arrow keys and spacebar yet!-while "Finty Flush" is a bit easier to grasp despite the fact that I ended up with a high score of six (!?!) after the first game. Regardless, all these games are small and probably fun, plus they

have the added bonus of that really annoying MIDI music just in case your nerves aren't quite frayed enough by the games themselves.

As you might expect from a package of such considerable dimension, the minimum computer requirements are proportionate. Where each application individually looks for different amounts of storage space, each also affords a "full" installation to your hard drive or a "minimum" in which only those files needed to run your chosen program from the CD-ROM are transferred.

The range determined by Microsoft for installation of all the Home Essentials components is 136 MB for "minimal" to 202 MB for "full." You'll also need a Pentium 90 MHz or greater CPU, Windows 95, 12 MB of RAM and a CD-ROM drive.

ONLINE

Weaving your own Web site

Continued from page 123

Web page by pressing the keyboard key associated with it. Say you had three separate forms on a Web page that let you select between different types of apples, bananas and cherries. To let a user choose between the different forms, you can select a letter to be associated with each form, as in the following:

<FIELDSET>

<LEGEND ACCESSKEY="A">APPLES</LEGEND>

...selectable input

</FIELDSET>

<FIELDSET>

<LEGEND ACCESSKEY="B">BANANAS</LEGEND>

...selectable input

</FIELDSET>

<FIELDSET>

<LEGEND ACCESSKEY="C">CHERIES</LEGEND>

...selectable input

</FIELDSET>

At the time of writing, these tags are only supported within Internet Explorer 4.0., and it does not currently support the ACCESSKEY attribute.

Funky buttons

The new <BUTTON> tag works in a similar fashion to the basic "submit" button, but does not tie the Web author down to a particular function for the button. You can easily change the text of the "submit" and "reset" buttons, but they have particular pre-defined functions within any Web form. Similarly, you can use <INPUT TYPE=BUTTON>, but it is tied for use in JavaScript programs. The <BUTTON> tag is designed to overcome the limitations of these other form buttons.

The <BUTTON> tag is a container tag capable of handling any character-formatting HTML tags, images and regular text. The <BUTTON> tag takes the standard NAME/VALUE pairs typical to most <INPUT> tags, and they have the same function. One of the big differences is the TYPE attribute, which can take one of three values: BUTTON, RESET, and SUBMIT. RESET, and SUBMIT assign those respective button values to the button being specified. The BUTTON value leaves the function of the button open to the Web author. The real fun with this tag is the fact that you can insert images and other things into it-it gives you the chance to make some truly funky-looking buttons. The following code should give you an idea of what you can do with it:

NAME="SUBMIT_IT" <BUTTON TYPE=SUBMIT VALUE="SUBMIT">NEED HELP WITH YOUR ORDER?</BUTTON>
 <BUTTON TYPE=BUTTON NAME="OTHER" VALUE="THE BUTTON">IMG SRC=KEITH2.JPG"><BR<U>PRESSME</> TO CON-TINUE!</U></BUTTON>

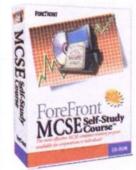
The <BUTTON> tag can also take an attribute called TABINDEX, which enables the Web author to specify the order in which an individual item can be selected from a group of items by using the Tab key. If there are two items in a list and they are given the TABINDEX values of "1" and "2" respectively, when a user presses the TAB button on their keyboard, the list item that corresponds to TABINDEX=1 is chosen first. If the user presses the Tab key again, the list



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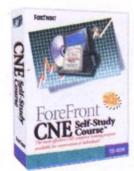
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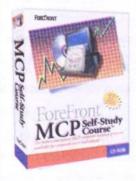
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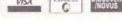
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ONLINE

item that corresponds to TABINDEX=2 is then

At the time of writing, the <BUTTON> tag only works in Internet Explorer 4.0.

The <LABEL> tag enables a Web author to associate a keyboard key to a particular form element. It works exactly like the ACCESSKEY attribute for the <LEGEND> tag, except that it can be used with any form element. It takes two attributes: ACCESSKEY (no surprise there) and FOR. The ACCESSKEY attribute must be specified, as it signifies the key to be associated with a particular option. FOR is an optional attribute, and it identifies the name of the form field the <LABEL> is associated with. If it is not specified the <LABEL> is automatically associated with the elements it contains. Here's some sample code that shows how it works:

<LEGEND ACCESSKEY=D TABINDEX=1>RUBBER DUCK-IES</LEGEND>

<LABEL ACCESSKEY=Y><INPUT TYPE=CHECKBOX NAME="RUBBERDUCKIE"

VALUE=YELLOW>YELLOW</LABEL>
 <LABEL ACCESSKEY=R><INPUT TYPE=CHECKBOX</pre>

NAME="RUBBERDUCKIE" VALUE="RED">RED</LABEL>

<LABEL ACCESSKEY=B><INPUT TYPE=CHECKBOX</pre> NAME="RUBBERDUCKIE"

VALUE="BLUE">BLUE</LABEL><BRE> </FIELDSET>

Unfortunately, at the time of writing, the full functions of this feature are not implemented within either Internet Explorer or Netscape Navigator.

Next time: More new HTML 4.0 tags.

Keith Schengili-Roberts welcomes any comments, suggestions or HTML tips and tricks you may have. You can email Keith at: kschengi@interlog.com. His book on HTML, The Advanced HTML Companion (ISBN: 0-12-623540-6) is available in bookstores. Previous articles in the series can be found at The Computer Paper Web site at: http://www.tcp.ca/.

Correction to February column:

A reader of this series recently pointed out a fundamental error that crept into the last two articles dealing with Unix commands: while all of the commands are listed as being Unix commands, some of them can only be used with the Unix ftp (file transfer program). In an effort to clarify things, the following lists the Unix commands and ftp-specific commands. Note several Unix commands, such as cd, Is and rm, can also be used in ftp.

Unix commands

(* These commands also work under ftp.)

cd = "Change Directory". Change to a different directory level. *
chmod = "CHange MODe". Sets read/write permission for files/directories.

cp = "CoPy". Copy files.

In = Makes a LiNk to a file

Is = "LiSt". Displays a directory listing. *

man = "MANual". Displays detailed information about a Unix command.

mkdir = "Make DIRectory". Creates a file directory. '

pwd = Returns working directory name *

mv = "MoVe". Move files.

rm = "ReMove file". Deletes files from the server. *

rmdir = "ReMove DIRectory". Deletes the specified directory from the server. *

ftp-specific commands

Icd = "Local Change Directory". Change the directory at the local machine.

mput = PUTs Many files to the target location

put = PUTs a single file to the target location

!Is = Displays a local directory LiSting

!pwd = Returns working local directory name.

Thanks goes to Kaz Kylheku who spotted the oversight.

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APPLES B.C. COMPUTER SOCIETY, A User Group for Macintosh and Apple IIs. Macintosh meetings are on 3rd Wednesday of each month at the York House School in Vancouver at 7 p.m. Novice and other special meetings are on 1st Monday of each month at 7 p.m. at the Century House in New Westminister. For further information call 437-9935 or 299-9597

ATARI USERS! Vantari, P.O. Box 3614 Main Post Office, Vancouver, BC V6B 3Y6. Bill Sutherland 988-1450; Don Hatch 433-8055. Meets 2nd Wednesday, 7:30 p.m., Hastings Comm. Ctr., 3096 E. Hastings.

B.C. EDI USER GROUP. For more information call 532-8204 (preferred), or voice mail 532-8219

B.C. INTERGRAPH USERS GROUP (BCIUG) Contact: Mike Barnes 528-1936 (voice) of 528-2944 (fax) for info on next meeting.

B.C. OPENSTEP GROUP. Prepare now for B.C. OPENSTEP GROUP, Prepare now for Rhapsody! Apple has adopted OPENSTEP/NEXTSTEP as the basis for its new OS.OPENSTEP is an Object-Oriented operating system for rapid application development on multiple platforms (including Mach UNIX on Intel or NeXT hardware, Windows NT,Sun Solaris, HP PA-RISC). For meeting information call Kevin Hiebert at (604) 738-3144, visit our web site at www.bcon.org.org.sept.e-mail to webmaswww.bcog.org or send e-mail to webmaster@bcog.org

B.C. REGIONAL USERS GROUP SOCIETY of Hewlett-Packard Users. For information, call Daren Statichuk at 661-8753 or BCRUG at 661-8048.

CLASSIFIEDS

ADVERTISING IS FREE FOR INDIVIDUALS. For business, classifieds are \$7 per line (40 characters). Send in your ad, along with your payment for the March issue by Friday, February 27, 1998. Individuals: to qualify for a free ad, the ad must be for a one-of-a-kind item. Free ads qualify for one month in the local edition only. All other ads classify as business ads and are subject to the \$7 per line charge. The Computer Paper reserves the right not to print submissions.

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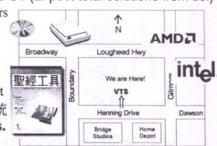
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USER GROUPS

B.C. VAXVMS Local Users Group (BCVAXLUG) provides a forum for the professional growth and education of its members through the exchange of solutions, ideas, and opinions. User group meetings are held the 3rd Wednesday of every other month at 6:30 p.m with location to be advised. For further info please call voicemail 276-6966.

BIG BLUE AND COUSINS. PO Box 5309, Station B, Victoria BC V8R 6S4. General meeting last Wednesday, 7:30 p.m. at U. Vic.-Elliott Bldg., Lecture Theatre 168. Also, special interest group meetings. 382-3934.

CANADIAN INTERGRAPH USERS GROUP CONFERENCE. September 8-11, 1996. Delta Meadowvale, Mississauga, ON, "Drive The Open Road". Contact Laura Banman, Intergraph, 2912 Memorial Dr. SE, Calgary AB TZA 7R9. Voice: (403) 569-5562 Fax: (403) 569-5801 email: libanm@ingr.com

CANADIANS ON COMPUSERVE. All Canadians around the world, as well as anyone interested in Canada and Canadian issues can join in on interesting discussions in The Canada Forum on CompuServe. Politics, international policies, Canadian culture, and regional information can all be found in the forum and don't forget to check out the large selection of library files. On top of this, Machine Translation between Canada's two official languages allows all Canadians to communicate with each other. Simply GO CDNFOR from anywhere on CompuServe. Dial 1-800-487-0453 for more information.

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CIPS VANCOUVER SECTION. (Canada's largest Association for Computer Professionals). CIPS Members enjoy unparalleled networking and professional development opportunities at our monthly meetings and special events. Discounts offered for student members. PO Box 20522, Howe St, Vancouver, BC V6Z 2N8. Phone (604) 681-2796 or Fax (604) 689-1879 for next meeting date.

COREL ARTISTS USER GROUP. Last Tuesday of every month, 7:00 to 10:00 pm, at Kwantlen College in Richmond, BC. Monthly newsletter. Contact: Bev Harcus, 533-5854.

DATA-LINK/USERS GROUP. Tel 321-3387. PC support BBS: 321-8873 (24 hr service), with specialized self-made BBS software. The purpose of this User group is to allow users to get together for problem solving, discussion of setup and to meet people. Call by voice 8 a.m.-4:30 p.m. ONLY please. This group is dedicated to RoboBOARD by Seth Hamilton. Other BBS software are welcome. Membership is free!

ELECTRONIC COMMERCE CANADA (ECC) is an organization dedicated to advancing the utilization of electronic commerce technologies and standards. Based in Ottawa, Ontario ECC holds regular monthly education seminars and an annual

Symposium. web site: <www.ecc.ca>, email: <office@ecc.ca> Phone: (613) 237-9900

FOXSOFT, EDMONTON'S FOXPRO USERS GROUP-second Tuesday 7.00 pm, Grant MacEwan City Centre Campus, East Wing, Room C-137/C-135, 10700-104th Ave. Contact: Ken Rayner at 437-0315 or Robin Stuart at 460-3712 (days). Info Bulletins on BBS 457-4105.

GENERIC CADD USERS GROUP. Contact: Frank Zander (604) 582-8283. BBS: 294-8287 (9600 n,8,1).

INDEPENDENT COMPUTER CONSULTANTS ASSOCIATION OF BC. The ICCA is a non-profit association of consultants who provide services in the field of Information Technology. The objectives of the ICCA are to provide a forum where consultants can network with each other, exchange ideas, and improve their business and computer skills. Monthly meetings with speakers. For further information contact us at: Suite720-999 W.Broadway, Vancouver, BC VSZ 1K5. Tel:(604) 734-2747 Fax: (604) 738-4080 or E-Mail:iccastar.ca WWW:http://www.icca-

LOTUS NOTES. - see "Pacific Notes User Group"

MACWEST COMPUTER SOCIETY. Meetings for members and visitors niclude Shareware copy sessions, software and hardware demos, and O &A sessions. If you use a Macintosh, check us out! General meetings: 2nd Wednesday of each month: Beginner's meetings: 3rd Wednesday of each month. 7:30pm, Coyote Creek Golf & Country Club, 152nd Street, Surrey. Web site: Street, Surrey. Web site: http://www.macwest.org/usergroup/index.html. MacWest First Class BBS modem number; 502-9593. Login as: Guest/guest. Messages and information at: 268-9530

MS ACCESS TECHNICAL USER'S GROUP. For those who want to participate in learning more about MS Access. For information call Greg Hind at 454-0262, from 9:00 to 5:00.

NANUGS (Northern Alberta Novell Users Group Society) - meets quarterly at the CompuSmart store on Mayfield Road. For information, please e-mail to nanugs@freenet.edmonton.ab.ca or phone Mike Brown (403)487-7666.

OBJECTS USER SOCIETY. See British Columbia OpenStep Group

OPENSTEP USER SOCIETY (VNUS). See British Columbia OpenStep Group (B.C.O.G.).

PACIFIC NOTES USER GROUP (PACNUG) - Lotus Notes users meet the last Wednesday of each month (except August and December) 5:30pm

at IBM. Contact Delores Beier at 988-2141 or dbeier@aw.ca

PC/MAC USER GROUP. Wanted Professional Photography/Graphic Designers to share, network and learn the latest hardware and software programs available. Starting May 7th we will meet at 7:00pm every 1st and 3rd Tuesday of the month, at Tricera Computer Center, #203-1836 W 5th Ave. If you are interested please contact. B. Hanington at either 873-6915 or rasta@mindlink.bc.ca for further info.

NON-PROFIT,PC based gaming group. Monthly events. You bring the PC, we'll supply the competition. For info, visit http://www.Sniper.NET or email Grimoire@Rogers.WAVE.CA

PORT COQUITLAM COMPUTER CLUB. Commodore, Amiga - IBM-Mac. 1st & 3rd Tuesday, 7:30 p.m., Room 8 Minnekahda Middle School, 1390 Laurier Ave., Port Coquitlam. Ed Dyer-Publicity at 942-

POWER BUILDER. User group being formed. Meetings are planned for first Wednesday. To enroll call Perform System Developers at voice mail 604-264-0247.

SQL SERVER. User group being formed. Meetings are planned for first Monday. To enroll call Perform System Developers at voice mail 604-264-0247.

T.I.99/4A COMPUTER B.C.99er Users Group, every Thursday 7-10 p.m. For information, call Ron: 522-2598.

TEENS IN VANCOUVER USER GROUP. For teens under the age of 16 interested in doing computer related projects regularly, WWW, programming, games; anything! The main goal is to share computer knowledge and to make friends. If there are any homeschoolers interested, that would be great. If interested, please call Orton Mak at 926-

THE TOPKIDS CLUB. A user group for kids, teens and parents. Monthly meetings are family focused with software/hardware demonstrations guest speakers, Windows and Mac tips and online demonstrations. A BBS is available to members. Call Garland Coulson 279-5439 or email garland_coulson@topkids.com

VANCOUVER AUTOCAD USERS SOCIETY. 1st Wed. of the month, 7:30 p.m., B.C.I.T. Bby. Campus Bldg. SW5 Room 1850. Contact: Frank Zander (604) 582-8283.

VANCOUVER DELPHI DEVELOPERS ASSOCIATION meets once a month at the Liquor Distribution Branch Head Office in East Vancouver. The meeting is usually on the 2nd or 3rd week of the month on Tue or Wed depending on availability of facilities. The purpose of the group is to provide a common and regular forum for Delphi developers to get together and discuss Delphi related issues. All meeting notices are sent via fax or e-mail. Please contact Michael Li at mli@infocan.com, or fax:(604)736-5866 or tel: (604)736-5888 ,ext.728.

VANCOUVER ENTERPRISE FORUM, 432-8761.

VANCOUVER FOXPRO USER GROUP (VFUG). September-June, 2nd Tuesday, at 1900 hours; 200-1177 W. Broadway. Info Doug at 736-2922, BBS 231-9709 and e-mail to joytan@uniserve.com

VANCOUVER GEOWORKS USERS CLUB. For further info. please call: 683-7490 (eves).

VANCOUVER GEOGRAPHIC INFORMATION SYSTEMS USER GROUP. Meetings are held on the 1st Wednesday of each month, September through May, at B.C.I.T. Town Square Room 'C' at 7:30pm. Contact Dwight at 940-1518 for information.

VANCOUVER KAYPRO USERS GROUP-VANCOUVER PORTABLE COM-PUTER CLUB (VPCC), AMO 17, friendly members, heritage CP/M soft-ware, the latest DOS and Windows files, plus inexpensive access to the planetwide Fidonet! Visitors welcome to our BBS. Contact person: Jay Siegel, 4251 Lancelot Dr, Richmond, B.C., V7C 4S4, 271-1519, BBS

VANCOUVER NETWARE USERS GROUP (VNUG) is an official user group recognized by the Netware Users' International Assoc. and supported, in part, by Novell. Meetings are held on the first business Monday of every month at The Stanley Park Dining Pavilion. All aspects of the networking environment are discussed and presented with emphasis on the Netware network operating system. The workshop begins at: 4:00p.m., buffet dinner at 6:00pm, at 7:00pm is a Q&A session followed by a presentation ending at around 8:30pm. Member, no-member and student pricing applications to the workshop and/or dinner-presentation. For further informato the workshop and/or dinner-presentation. For further informa-tion or meeting topic announcements call our voice mail at 689-VNUG (689-8684) .

VANCOUVER OS/2 USER GROUP. Attended by OS/2 gurus and novices alike and well supported by IBM. The large and lively meeting is held on the first. Wednesday of each month at the BC Tel Building, 3777 Kingsway, Burnaby and starts at 6:45 pm. Join us for an informal work-shop beginning at 11:30 am on the first and third Saturdays of each month at Doppler Computer Superstores, 485 W. 8th Ave., Vancouver. Contact: Jim Shewchuk 876-4780.

VANCOUVER PC USERS SOCIETY (VPCUS)- Meets every VANUOUVEM PC USERS SOCIETY (VPCUS)- Meets every Thursday,7pm at Science World, members free, \$5 guests. Excellent Q&A session & feature presentation. Our mission is to educate and inform our members and the general public on the current and future issues in personal computing, and to provide a social context for the business, educational and personal use of microcomputers. We offer on disk newsletter, educational seminars, special interest groups (see separate VPCUS SIG listings), and more. Call 290-0660 for details and schedule.

VANCOUVER SMALLTALK USERS GROUP (VSMUG) is a group of indivaluctovers smaller facts of the content of the con web site at http://lucy.csc.uvic.ca/~bnfb.

VANCOUVER WINDOWS NT USERS GROUP (VANTUG) Meetings are held on the 3rd Tuesday July, Sept, Nov. at 6.30pm. Please consult our website for further information on agenda items, membership. Details or meeting locations: http://www.vantug.com Email Nancy Pearce, VANTUG President at Nancy@steeves.bc.ca.

VISUAL BASICS USERS GROUP is for users, developers and consultants creating consumer programs and client specific applications. Presentations by industry experts. Meets 2nd Thursday of each month at 6:00pm at Vancouver Film School,420 Homer St(&Hastings,above Web Cafe) Vancouver,BC. Contact 24-6600 or salespro@bc.sympatico.ca for details of upcoming meeting.

VISUAL OBJECT DEVELOPERS ASSOCIATION OF VANCOUVER - For information on our next meeting, contact John Kniewasser (604) 4308210 fax: (604) 431-3946 CIS 72120.3156

VPCUS CLARION-TOPSPEED SIG- Clarion is a full-featured, industrial-strength DOS &Windows application development tool. Its superior high level language and re-usable templates produce compilable code and tight EXE's that run fast and are royalty free. This lively SIG attracts a range of participants from seasoned professional programmers to new users and the curious. Meets the 2nd Tuesday of every month. Contact John Golka, 736-7762.

VPCUS DBUG SIG (Data Base Users Group) Emphasis is on solving problems of data management with special reference to Paradox. Bring a blank 3.5 inch disk to pick up goodies from the meeting. Meetings for the next few months will be informal, and held at a local pub. Contact Brad Froese, 939-3093.

VPCUS Educational Seminars - Members \$5, Non-members \$15 Various topics, times and dates. Contact Gwenda Ellwood, 737-8674.

VPCUS HTML AUTHORING SIG- This SIG is a good place to come for informal discussions with other HTML developers, or to get advice on building business and personal Web pages Topics include graphics and HTML.plug-ins, the browser wars.jamba, connectivity issues and marketing on the internet. Both novice and advanced HTML authors are welcome. We meet on the 2nd Tuesday of each month. Contact Brenda Delaney: bdelaney@unixg.ubc.ca.or Virginia Green: virginia@arts.ubc.ca for meeting info,and to get our email list.

VPCUS Internet SIG - New to the info highway? Get to know the internet and the Web with an experienced guide. Contact Joe Thompson for details.685-6945.

VPCUS LINUX SIG-Linux is the free alternative to Windows, DOS, and OS/2. Its's the tried and true Unix OS configured to run on PC's. The system is open, full featured, robust, and getting better all the time. "Most web servers run on Linux." See what makes it so attractive to those who know. Meets on the 3rd Monday of each month. Contact Stan Clausson at 532-6846, or email:clausson@direct.ca

VPCUS NETWORKING SIG- This is the place if you are a network administrator and you need a break from beating your head against a wall, or want to relate with people who actually care what you're talking about. Come and share Novell glory stories,tips, tricks and support ideas. Currently on hiatus, we'e looking for volunteers interested in getting this SIG going again. Contact Brenda Delaney:bdelaney@unixg.ubc.ca, or fax 224-2143 for more information.

VPCUS WINDOWS PROGRAMMING SIG-For programmers and intermediate to expert Windows users who are interested in PC programming, particularly in C, Access, Delphi, VB, java, etc. Meets on the 2nd Tuesday of most months. Contact Casey Hawthorne at 879-2703,or email: caseyh@istar.ca

VPCUS WINDOWS USERS SIG-For Windows users at all levels. Learn and share tips, techniques, pitfalls, configurations, and optimizing strategies for best using WIN'95. A new SIG to meet on the 3rd Wednesday of the month. Contact Casey Hawthorne at 879-2703, or

VPCUS WORDPERFECT SIG -Participants share tips and tricks of this wonderful office product. Contact Holly Rivers at 731-0039, or email: hollyr@dowco.com

Help Desk Institute Local Chapter. An organization providing training, education and a networking forum for Help Desk Professionals. Those people who help computer users with hardware or software ns. For more information on memberships. Please send your email to Karen Yuen at: KYUEN@VSE.CA



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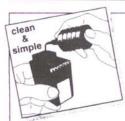
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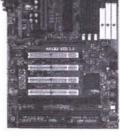


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Dr. Jekyll and Mr. Hyde

Who are the good guys, and who are the bad guys, in the effort to control Microsoft?

BY JEFF EVANS

Scott McNealy of Sun Microsystems once characterized Microsoft as "a post office box for royalty cheques." The degree of truth in that crack explains much of the attention Microsoft is currently receiving from lawyers and lawmakers in the U.S.

Microsoft's legal troubles are as closely related to that company's astounding profitability as they are to the apparently endless growth that has sparked cries of monopoly. Everything about Microsoft these days seems bigger than life. Its co-founder, Bill Gates, is the world's richest man. Thousands of its early employees and investors have become "Microsoft millionaires." As a result of its brilliantly talented employees, first rate management, exceptional marketing savvy, several major pieces of good luck, as well as its allegedly predatory practices, Microsoft has become supreme in the personal computer software market.

Its products are everywhere. Its influence is enormous. Virtually all decisions in the computer industry are made with reference to Microsoft's strategies, product offerings, and possible future actions. As Microsoft looms larger on the economic landscape, it has become a target for a host of enemies, all proclaiming the public good as their motive for going after the company.

Prince of thieves?

The poet Baudelaire once sardonically claimed, "Behind every great fortune there is a great crime." In the case of Microsoft, the company's defining moment was Bill Gates' success in hitching a ride on the coattails of the computer industry's other monopolistic behemoth. IBM.

Big Blue turned to "the Kid," as Gates was sometimes called, to supply a disk operating system (DOS) for its new personal computer project in the late '70s. Most IBMers saw the PC project as a sideshow to the hugely profitable mainframe near-monopoly. When Gates insisted on retaining the rights to DOS, the eventual decision was, "let the kid keep it." IBM's decision to forego a monopoly on DOS was not motivated by generosity, but by indifference and lack of imagination. And so, Gates had the opportunity to build DOS into the first true multi-vendor computer operating system, which became the closest thing to a "standard" in the otherwise chaotic PC industry.

The other Big Brother who failed

It's worth noting there was another personal computer company with avowedly monopolistic dreams during the years when Microsoft was small and struggling. That company was Apple Computer.

In the Apple vision, there was to be only one maker of personal computer operating systems "for the rest of us": Apple. There was to be only be one manufacturer of Mac computer hardware: Apple. One company would set the standards for user interface: Apple. And one company would give or withhold approval of third-party developers, and enforce a "not invented here" filter against unauthorized technology making its way onto any Mac motherboard: Apple again.

Despite the strengths of its initial OS, most computer users decided not to buy into Apple's hopeful but closed vision. Its dream of a benign Mac dictatorship soured as its proprietary strategies failed in the face of Microsoft and the IBM-compatible PC industry's greater appeal to the mainstream computer market.

Snatching defeat from the jaws of victory

Gates has achieved Microsoft's current triumph partly by his own ruthless cleverness and determination, but he's been helped at every stage by his competitors' blunders.

Xerox failed to capitalize on its development of the graphic user interface in the 1970s, and let it slip into Apple's hands. IBM let DOS slip out of its hands, and then wasted years pushing proprietary technologies the market didn't want, such as Micro Channel Architecture and OS/2. Even Apple, which throughout the 1980s had a grossly superior operating system to Microsoft's, managed to bungle its chances for success, despite Gates' best attempts to help.

In a memo recently unearthed and published in *Wired*, in the late 1980s Gates actually laid out a road map for Apple's senior managers to port the Mac OS to the Intel platform. If Apple had done so, Gates would probably still be a billionaire, selling Mac-compatible business software and games, but the Mac OS might be the monopolistic "threat" rather than Windows.

Instead, Apple stayed away from the Intelbased PC platform and handed Gates an entire decade to gradually drag Windows from its original status in 1985 as a piece of crap (Windows v. 1.0) to its 1998 status as a superior business networking OS (NT 4.0).

Litigation lifestyle

The legal challenges against Microsoft may have some merit, but they are also terribly tainted by the litigation and lobbying culture of modern day America.

Some of Microsoft's competitors, who have failed to compete in the market due to their own incompetence, are anonymously subsidizing many of the legal challenges against Microsoft, to try to succeed by legal harassment after they have failed in the market. A variety of class action suits, ranging from complaints against the operation of the Microsoft Network to lawsuits by Microsoft employees, should be considered to be as much a quest for money by the lawyers involved as a quest for justice by genuinely aggrieved plaintiffs.

One of the scandals of the American system of litigation is the recent trend in class action suits for the lion's share of the settlements to be devoured by the entrepreneurial lawyers involved. In some cases, after legal bills are paid, even successful plaintiffs receive only a tiny percentage of the settlement, or nothing at all. Microsoft is seen as a gigantic bag of money, and America lawsuits are sometimes seen as a form of lottery

with higher chances for a million-dollar payoff than any regular form of gambling.

Canadians and other PC users outside the U.S. should also keep in mind that although for a variety of reasons (including well-funded lobbying by Microsoft's competitors) the American government sees a domestic Microsoft monopoly on computer operating systems to be a threat, America is basically unaware of and unconcerned with the near monopoly U.S. firms enjoy internationally in many categories of computer products. In fact, in a global economy where

America's "soft" intellectual property industries, such as software, entertainment and financial services, have helped to cushion the decline in America's traditional smokestack industries, one major constraint on the U.S. Department of Justice and other anti-trust actions may be a fear of losing a lucrative export market if Microsoft is crippled.

There are two faces to the Microsoft puzzle, one fair and one rather ugly. On the one hand, Microsoft sells good (or at least, competitive), popular products at reasonable prices. It has established Windows as a de facto standard without any particular corporate, legislative or government favoritism, succeeding against intense competition by companies with similar opportunities.

Windows has provided a platform for thousands of third-party developers to create hardware and software that can run on any of the tens of millions of Wintel computers around the world. The company has continued to develop versions of many of its titles for the competing Mac OS, including Office 98 for the Mac (which contains advanced features not yet available for Windows PCs).

Microsoft has also invested directly in Apple, boosting the chances of its competitor's survival. And the company has had a long-term involvement in the UNIX consortium, and is collaborating with Silicon Graphics, a company whose IRIX OS is a direct competitor with Windows.

On the other hand, Microsoft's market share in PC operating systems is approaching the level of an effective monopoly due to the collapse of IBM's OS/2 and the drastic decline of the Apple Mac's global market share. The integration of Windows with Microsoft's busi-

ness applications suites has helped it reduce competition from Lotus' and Corel WordPerfect's suites in the business market.

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It is certainly playing hardball with Netscape (which just announced major losses), with a variety of questionable tactics including pressuring PC vendors not to carry any browser but Internet Explorer, and offering online services that are incompatible with Netscape Navigator. And, if Microsoft continues its growth, with new initiatives such as higher-end server products, more tightly integrated OS and browser, and online commerce, and pervasive, handheld platforms such as Windows CE, it could truly stamp out much of the variety of choice in the computer market.

Or could it? IBM once seemed invincible, but it was humbled by changes in the market brought about by the PC, and crumbled quickly, just barely pulled back from the abyss by an effective new leadership. Microsoft recently seemed threatened by the advent of both the Internet and Java, but after a huge change in direction, it now seems set to dominate the Internet and maybe run rings around Java and the Network Computer alliance.

It may be justifiable and good for the various U.S. federal and state agencies to keep Microsoft off balance, and to try to rein in its most objectionable practices. However, Canadians should keep in mind that in this battle of titans, we are on the sidelines, and we will have to live with whatever outcome America presents to the rest of the world. Whether any of the people aiming to profit by bringing down Microsoft will actually go on to exert themselves to make computing better, easier or more affordable for the rest of the world, seems rather doubtful.



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